S. HRG. 100-513

NUCLEAR PROTECTIONS AND SAFETY ACT OF 1987

HEARINGS

BEFORE THE

COMMITTEE ON GOVERNMENTAL AFFAIRS
UNITED STATES SENATE

ONE HUNDREDTH CONGRESS

FIRST SESSION

ON

S. 1085

TO CREATE AN INDEPENDENT OVERSIGHT BOARD TO ENSURE THE SAFETY OF UNITED STATES GOVERNMENT NUCLEAR FACILITIES, TO APPLY THE PROVISIONS OF OSHA TO CERTAIN DEPARTMENT OF ENERGY NUCLEAR FACILITIES, TO CLARIFY THE JURISDICTION AND POWERS OF GOVERNMENT AGENCIES DEALING WITH NUCLEAR WASTES, TO ENSURE INDEPENDENT RESEARCH ON THE EFFECTS OF RADIATION ON HUMAN BEINGS, AND FOR OTHER PURPOSES

JUNE 16, 17, 1987

Printed for the use of the Committee on Governmental Affairs

U.S. GOVERNMENT PRINTING OFFICE

81-003 WASHINGTON : 1988

For sale by the Superintendent of Documents, Congressional Sales Office
U.S. Government Printing Office, Washington, DC 20402

S401-30

COMMITTEE ON GOVERNMENTAL AFFAIRS

JOHN GLENN, Ohio, *Chairman*

LAWTON CHILES, Florida
SAM NUNN, Georgia
CARL LEVIN, Michigan
JIM SASSER, Tennessee
DAVID PRYOR, Arkansas
GEORGE J. MITCHELL, Maine
JEFF BINGAMAN, New Mexico

WILLIAM V. ROTH, JR., Delaware
TED STEVENS, Alaska
WILLIAM S. COHEN, Maine
WARREN B. RUDMAN, New Hampshire
JOHN HEINZ, Pennsylvania
PAUL S. TRIBLE, JR., Virginia

LEONARD WEISS, *Staff Director*
MIMI CONWAY, *Professional Staff Member*
JO ANNE BARNHART, *Minority Staff Director*
MICHAL SUE PROSSER, *Chief Clerk*

CONTENTS

Opening statements: Page

Senator Glenn 1, 39
Senator Heinz 3
Senator Sasser 4
Senator Mitchell 41

WITNESSES

Hon. Brock Adams, U.S. Senator from the State of Washington 5
Hon. Norman D. Dicks, a Representative in Congress from the State of Washington 7
J. Dexter Peach, Assistant Comptroller General, U.S. General Accounting Office, accompanied by Keith Fultz, Associate Director for Nuclear and Electricity 11
John F. Ahearne, Ph.D., Vice President, Resources for the Future, Inc 23
Dan W. Reicher, Attorney, Natural Resources Defense Council 29
J. Winston Porter, Assistant Administrator, Solid Waste and Emergency Response, U.S. Environmental Protection Agency, accompanied by Lisa Friedman, Associate General Counsel, Bruce Weddle, Director of Permits and State Programs, Office of Solid Waste, and Floyd Galpin, Acting Director of Criteria and Standards, Office of Radiation Programs 35

WEDNESDAY, JUNE 17, 1987

Joseph F. Salgado, Under Secretary, U.S. Department of Energy, accompanied by Troy E. Wade III, Principal Deputy Assistant Secretary for Defense Programs, Delbert F. Bunch, Ph.D., Acting Deputy Assistant Secretary for Safety, Health, and Quality Assurance, Ray Berube, Acting Director, Office of Environmental Guidance and Compliance, and J.W. Thiessen, M.D., Associate Director, Health and Environmental Research 42
Joseph Misbrener, President, Oil, Chemical and Atomic Workers International Union; James Kelly, President, Local 8031, United Steelworkers of America; A.L. O'Connor, President, District 34, International Association of Machinists; and Donald Elisburg, Counsel, Industrial Union Department, AFL-CIO 61
Philip Landrigan, M.D., Director, Division of Environmental and Occupational Medicine, Mount Sinai School of Medicine; and James Melius, M.D., appointee, Division of Environmental Health Assessment, N.Y. State Department of Health 72
Frank White, Deputy Assistant Secretary, Occupational Safety and Health Administration, U.S. Department of Labor; and Edward Baker, M.D., Acting Deputy Director, National Institute of Occupational Safety and Health, U.S. Department of Health and Human Resources 78

ALPHABETICAL LIST OF WITNESSES

Adams, Hon. Brock: Testimony 5
Ahearne, John F., Ph.D.:
Testimony 23
Prepared statement 130
Responses to written questions submitted by Senator Roth 138
Baker, Edward, M.D.:
Testimony 78
Prepared statement 252
Responses to written questions submitted by Senator Glenn 256

Page

Berube, Ray: Testimony 42
Bunch, Delbert, Ph.D 42
Dicks, Hon. Norman D.: Testimony 7
Elisburg, Donald: Testimony 61
Friedmen, Lisa: Testimony 35
Fultz, Keith: Testimony 11
Galpin, Floyd: Testimony 35
Kelly, James: Testimony 61
Landrigan, Philip, M.D.:
  Testimony 72
  Prepared statement 216
Melius, James M., M.D.:
  Testimony 72
  Prepared statement 226
Misbrener, Joseph:
  Testimony 61
  Prepared statement 207
O'Connor, James: Testimony 61
Peach, J. Dexter:
  Testimony 11
  Prepared statement 110
  Responses to written questions submitted by Senator Roth 124
Porter, J. Winston:
  Testimony 35
  Prepared statement 169
Reicher, Dan W.:
  Testimony 29
  Prepared statement 147
  Responses to written questions submitted by Senator Roth 165
Salgado, Jopseph F.:
  Testimony 42
  Prepared statement 175
  Responses to written questions submitted by:
    Senator Sasser 199
    Senator Mitchell 202
    Senator Roth 205
Theissen, J.W., M.D.: Testimony 42
Wade, Troy E., III: Testimony 42
Weddle, Bruce: Testimony 35
White, Frank:
  Testimony 78
  Prepared statement 232
  Responses to written questions submitted by Senator Mitchell 238

APPENDIX

Text of S. 1085 85
"Response to Mound Environmental Preliminary Survey Report," memorandum, June 24, 1987, from S.R. Foley, Jr., Assistant Secretary for Defense Programs, Department of Energy 260
Statement of Eula Bingham, Vice President and University Dean for Graduate Studies and Research Professor of Environmental Health, University of Cincinnati 274

NUCLEAR PROTECTIONS AND SAFETY ACT OF 1987

TUESDAY, JUNE 16, 1987

U.S. SENATE,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
Washington, DC.

The Committee met, pursuant to notice, at 9:45 a.m., in room SD-342, Dirksen Senate Office Building, Hon. John Glenn (Chairman of the Committee) presiding.

Present: Senators Glenn and Roth.

OPENING STATEMENT OF CHAIRMAN GLENN

Chairman GLENN. The hearing will be in order.

The Department of Energy and its predecessor agencies have, since the beginning of the nuclear age, managed to avoid outside, independent oversight of their technical operations. In the past, this was justified on the basis of national security concerns—and I have backed some of those concerns in the past—and because of their very unique technical expertise.

In recent years, it has become increasingly evident that this situation is no longer tolerable. We know a lot more about some of these situations now than we did 20 or 30 years ago. We know more about how to treat them and what concerns we should have about some of these operations. DOE's neglect of health and safety matters and indifference to environmental protection are showing up in various ways.

For example, the DOE safety system currently is based on internal Safety Analysis Reviews [SAR's] which are carried out by DOE field offices. In reviewing that system for me, the General Accounting Office reported that not all facilities have approved safety reviews, that some provide little or no comparison with safety design criteria, and that the assumptions used in analyzing serious accidents were not uniform from one spot to another.

The level of analysis and lack of comparison used in the SAR's indicates a lack of thoroughness or consistency on the part of DOE in analyzing the design and construction, particularly of the older nuclear facilities, and most of these facilities are older, I would add.

In addition, the Department has employed risky practices in operating its facilities. For instance, DOE operated its reactors at Savannah River for nearly 7 years, from 1979 to 1986, at 26 percent higher power than the emergency core cooling system could handle in case of an accident. In other words, we would have had an un-

controlled meltdown. This information was first made public at our March hearings of this year.

In another development, a National Academy of Sciences Committee which was evaluating the safety of DOE reactors at the request of the Department, found even that the 26 percent cutback in power might still be insufficient. DOE did not reveal this information to the Committee, even though they testified twice before the Committee after they had this inforn.ation. It was not until I found out about the National Academy letter and the press was apprised as well that DOE further reduced the power levels at Savannah River to 50 percent.

Other examples of DOE nuclear risks were expressed by the Roddis panel, six independent experts acting as consultants to DOE. I give them credit for getting that panel together. The panel reviewed the safety of the N-reactor in Hanford, WA, which is the reactor in this country that is most like the Chernobyl reactor. It uses graphite as a moderator and does not have a standard containment system around it.

The panel found, among other things, that well over 100 recommendations on actions that should have been taken, many of them in the safety area, were still outstanding. Mr. Louis Roddis, who testified before this Committee in March, said that his principal recommendation to the Department of Energy was that the Department shut down the N-reactor permanently, unless a positive judgment were made that the requirements for defense material warranted accepting public hazards exceeding those of commercial reactors.

In other words, we oversee all the commercial electrical nuclear generating plants in the country very, very carefully. We have certain standards set. We have not been adhering to those same standards in the Department of Energy's weapons productions processes.

Despite this recommendation, DOE planned to restart the N-reactor after making some safety improvements. The Armed Services Committee, on which I also serve, voted recently to shut down the N-reactor unless there was some very overriding national concern.

DOE's attitude toward the environment has also been unsatisfactory. This Committee has heard extensive testimony about the environmental hazards created by unsafe waste disposal practices at the Feed Materials Production Center at Fernald, OH. I have visited that plant several times. We have had hearings out there about the procedures there.

Also, the Savannah River complex has extensive onsite ground water and soil contamination, including leaks from high-level waste storage tanks. DOE facilities in Colorado, South Carolina and Tennessee have contaminated the ground water with solvents as much as 1,000 times above the proposed drinking water standards. Mercury from one of DOE's Oak Ridge, TN, facilities has contaminated an offsite stream bed and a flood plain. And I call back to the Fernald area. We have ground water levels under there that are also contaminated. Some of the wells in the area have been shut down, permanently made unfit for use.

At a mixed waste facility in Hanford, WA, over 65 million gallons—one of the world's largest accumulations of hazardous, mixed

waste—is stored in some 170 buried tanks. Some of the older tanks have leaked.

DOE also has disposed of mixed wastes on occasion simply by discharging it directly into the ground. The ground water and soil have been contaminated at virtually all the DOE facilities reviewed by the GAO. How do you clean up an aquifer level? How do you clean up ground water contamination? We are not even sure we know the answer to that. We know it is going to be an enormous job. We know it is going to be very expensive. It is going to be in the billions to clean up something like this, and we have not gotten started on it even yet.

Today we are proceeding with a task long left undone: creating an oversight board responsible for safety in DOE defense facilities. It is essential that these facilities be run safely, that the health and safety of those who work there and live in the communities nearby be protected, that the land, air and water around these sights not be poisoned or polluted with harmful radioactive material and that studies involving the effects of radiation on humans be independent.

These are the basic reasons why I have introduced Senate bill 1085. In addition to Title I of S. 1085, which calls for an independent safety board, we will also hear testimony today on title III, which clarifies the jurisdiction of the Environmental Protection Agency over DOE mixed radioactive and hazardous wastes.

Tomorrow we will examine Title II, which applies the provisions of the Occupational Safety and Health Act, OSHA, and the functions of the National Institute for Safety and Health to employees in DOE nuclear facilities. And we will also look at title IV, which creates a Radiation Study Advisory Board to oversee DOE's research program on the health effects of ionizing radiation.

Before we hear our first witnesses, let me first thank my colleagues who are cosponsors of S. 1085. They are Senators Howard Metzenbaum, Brock Adams—who is our first witness here this morning—Dale Bumpers, Barbara Mikulski, Warren Rudman, and Carl Levin. I appreciate their support for this legislation.

Over in the House, Congressman Dennis Eckart of Ohio, who could not be here today, will introduce a counterpart to S. 1085 shortly. We look forward to working with him and other colleagues in the House.

Chairman GLENN. At this point I would ask that the statement of Senator Heinz be made a part of the record.

[The opening statement of Senator Heinz follows:]

OPENING STATEMENT OF SENATOR JOHN HEINZ

Mr. Chairman, I am very pleased that the Committee is again addressing the need for improvements at Department of Energy nuclear facilities. There is a clear and pressing need for improved quality assurance throughout the Department's operation of nuclear production.

My concern, and that of many Senators, is that we have not reviewed the need for improvement in the area of transportation. Presently the Department of Energy is shipping highly radioactive core material from Three Mile Island through urban areas across the country. This is high-level radioactive waste. At the same time, western Pennsylvania has in the past two months experienced two major derailments involving hazardous materials. The threat of a nuclear derailment is real, and should be brought to the attention of this Committee.

The shipment of nuclear materials, both by truck and by rail, will increase in the coming years. More low-level nuclear waste compacts are being developed, while the Federal Government searches for a high-level nuclear waste repository. There are serious questions outstanding about the safety of the routes chosen for the shipment of these wastes, the containment facilities railroads and trucks provide for the waste, and the types of trucks and rail cars that are bearing them. These issues present us with the same dangers as the operation of nuclear facilities—the threat of nuclear materials freely escaping into populated areas.

We should make no mistake about it. Dangerous core materials from Three Mile Island are being shipped through populated urban centers as we meet today. I hope the Committee will have an opportunity to review this threat to health and safety, and act accordingly.

Thank you, Mr. Chairman.

Chairman GLENN. Also, let me say that Senator Sasser was not able to be here this morning for our opening. He would like to have an opening statement, a comment on the bill, put into the record, and without objection we will enter that in the record at the start of the hearing, after my statement and other statements that were put in at the beginning of the hearing.

[The opening statement of Senator Sasser follows:]

OPENING STATEMENT OF SENATOR SASSER

Thank you Mr. Chairman. I would like to commend you for holding this hearing today on an issue of great importance to us all—assuring the safe operation of the Department of Energy's nuclear reactors.

The State of Tennessee has a long history with the Department of Energy. The Department operates four nuclear reactors in Oak Ridge, Tennessee, as well as a host of other nuclear operations.

Oak Ridge has suffered tremendous pollution problems as a result of the Department of Energy's operations in the area. Indeed, part of the reason for one of the sections of S. 1085 resulted from a lawsuit filed as part of a long battle to try to force DOE to clean up Oak Ridge pollution.

The Department of Energy lost that suit and was forced to accept responsibility for cleaning up some of the damage it has caused in Oak Ridge. But I share the concern of the natural resources defense council that perhaps we need some legislative insurance that the Department of Energy will continue to take responsibility for any radioactive pollution that it may cause.

These problems are not only Tennessee's problems, but are shared by Washington, Ohio, South Carolina, and other States.

A plan must be formulated to eliminate existing pollution and responsibly deal with waste disposal to ensure the protection of the public health and safety. The Department of Energy might well benefit from the assistance of an independent board established to oversee the operation of its nuclear reactors. Such a board would provide objectivity and expertise to guide the Department of Energy in its nuclear program.

I look forward to hearing the testimony today and to the opportunity to ask questions later. Thank you.

Chairman GLENN. Our first witnesses this morning are the Honorable Brock Adams, a Senator from the State of Washington, who has a very personal interest in this area and is very thoroughly familiar with all aspects of the Hanford site, and the Honorable Norm Dicks, a U.S. Congressman, also from the State of Washington, who is thoroughly familiar with all of that area. They have worked together in this area, and we welcome them as our first witnesses this morning.

Gentlemen, we look forward to your statements, either in full or abridged form. In any event, the entire statement will be included in the record.

Senator Adams, welcome.

TESTIMONY OF HON. BROCK ADAMS, U.S. SENATOR FROM THE STATE OF WASHINGTON

Senator ADAMS. Thank you very much, Mr. Chairman. It is a great pleasure to be here, and I am pleased to be here with my colleague, Norm Dicks, who will testify on his very interesting approach, also, to this matter. I think all of us need to do everything we can to be certain that we are approaching the problems which the Chairman outlined in that very excellent opening statement.

My colleague will indicate his approach to it, but I first want to thank the Chairman for introducing this bill. I think it is terribly important, and I was pleased to join in S. 1085, the Nuclear Protections and Safety Act of 1987.

Now, I realize, Mr. Chairman, that this legislation in many ways was simply the most recent of your longstanding efforts to expose and correct the threats to the safety of the public and to workers inside of the Department of Energy's nuclear production facilities. I applaud you for those efforts.

I also want to thank you, Mr. Chairman, and the other members of the Committee for your courtesy in allowing me to participate in the Committee's earlier oversight hearings on environment and safety problems that you have referred to where we all joined together to question DOE in March. I think you were shocked as much as I was by not only the testimony, but, as I will mention in a moment in my statement, the lack of testimony in certain areas that were of vital importance.

I think it cannot be stressed too strongly that if the Department of Energy does not change this policy of secrecy and lack of credibility, they can expect a series of actions by not only this Committee, Mr. Chairman, but appropriate Committees in the House the same way. We simply have to know exactly what is occurring and why it is occurring so that we can move on it in a proper fashion and arrive at a consensus in this country, Mr. Chairman, of what to do with these facilities.

Certainly, as one who represents one of the largest, and yes, one of the oldest—the N-reactor may not be the oldest, Mr. Chairman, but that facility is the oldest nuclear weapons production facility in the country—I cannot begin to tell you how vitally important the improvement or regulation and management of the Department of Energy is to our State, our region and yes, the whole country.

DOE's record of environmental and safety problems is so bad that it is only surpassed by the agency's staggering lack of credibility. With each passing day there is some new revelation about a safety problem that is either exposed, or equally incriminating, another problem too long concealed. The Chairman referred to it in his opening statement, and I am appalled by it, that we had a hearing in March and both of us were questioning the witnesses from the Department of Energy and last week a 1966 study concerning the safety problems at the N-reactor was revealed.

Despite the potential significance of this study, it was not made available to the Roddis Committee during its critical review of the safety of the N-reactor last year. Now, some may argue no harm was done in this case. After all, Mr. Roddis recommended that operation of the N-reactor be deferred. But while the result may be

right, the process was wrong. And if the process is wrong long enough, then someday the result will be wrong—dead wrong.

Mr. Chairman, the Department of Energy has operated outside of the reach of the independent regulatory authority and often outside of the environmental and safety laws that apply to every other industry in this country. We should not have a double standard of safety. Yet, the use of national security as an excuse, Mr. Chairman, to operate facilities that could not comply with safety standards has long become ingrained as a standard operating procedure, rather than an exception in the time of an immediate national security threat.

It is the regular way of doing business, Mr. Chairman, and that is what your bill and these hearings have addressed. National security has been an excuse for operating facilities year after year, decade after decade, in a manner we would not tolerate if they were private facilities. If the public needs the protection of reactor safety standards and regulation governing the design and operation of the Washington Public Supply System Unit-2 Reactor—which is an NRC licensed commercial plant—located on the same Hanford Reservation, then it needs those same protections for the DOE Research and Production Reactors located in the same place.

Mr. Chairman, you can stand at one point and look at both of them. If safety is required at one, it is certainly required at another. If the public needs the protection of the environmental requirements under RCRA, the Clean Air Act, the Safe Drinking Water Act, the Clean Water Act, and other environmental laws, those protections should not end where the Federal Government nuclear materials production facilities begin.

If workers in our factories and chemical plants need the protections of OSHA and NISA, those protections should not be withheld from workers because they work for a DOE contractor. Mr. Chairman, your bill, S. 1085, moves in the right direction to end this double standard and to establish independent oversight over DOE.

Undoubtedly, there will be those who oppose such measures as obstructing national security. As our experience in Washington State shows the failure to accept and enact provisions such as those in S. 1085 will, in my view, make it virtually impossible to obtain public support for the continued operation and modernization of DOE's nuclear weapons production complex.

Mr. Chairman, in this democracy you have to arrive at a consensus or in time the whole process breaks down. I realize we cannot solve all of DOE's problems at once. They have not happened overnight and it will take years to correct them, and it will take funding to clean up dozens, if not hundreds, of contaminated sites, some in your State, some in mine, some in others.

The High-level Nuclear Waste Program must be completely retooled. My own view is that DOE itself must be reorganized. I look forward to working with you in addressing the immediate regulatory issues raised in S. 1085, and Mr. Chairman, after that, continuing over the longer term, to correct the organizational problems plaguing the Department of Energy.

Mr. Chairman, it is a great pleasure for me as a Senator from the State of Washington to welcome my colleague, who I have known many years—and who I am sure you have known when he

worked for Senator Magnuson—back to the Senate to testify on his bill. It is another approach, but I think we are all moving in the same direction, and frankly, Mr. Chairman, I was appalled if not frightened by the testimony that we heard in March, and what bothers me even more is that I do not think we heard the whole story, that each time there is another little revelation, it seems to add to the picture.

Congressman Dicks has for many years been interested in looking at this. It is a great pleasure, Mr. Chairman, to welcome him to the Senate and to the Committee.

Norm, it is yours.

Chairman GLENN. Thank you very much, Senator Adams.

TESTIMONY OF HON. NORMAN D. DICKS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WASHINGTON

Mr. DICKS. Thank you, Brock, for that very generous introduction, and Mr. Chairman, I want to thank you and compliment you on the extraordinary leadership that you are providing on this issue here. It certainly has caught the attention of many of us in the House of Representatives who are also interested in this issue.

I want to thank you for this opportunity to address your Committee on the issue of independent oversight of the Department of Energy nuclear facilities, and especially on your bill, S. 1085. As you know, Mr. Chairman, I too have introduced legislation on this subject, H.R. 2047, because I strongly agree that the Department has seriously compromised its ability to operate its facilities without independent oversight.

I might add that Secretary Herrington apparently has come to the same conclusion, having recently admitted that some form of independent oversight is basically going to be required by the Congress. My State, Washington, has within its borders the Hanford Nuclear Reservation, a prime example of DOE's mismanagement that has contributed to the Department's loss of credibility and public confidence.

For 40 years DOE has operated the Hanford Reservation with insufficient regard for public safety, placing production goals always at the top of the priority list. Years ago emissions were released into the atmosphere containing levels of radioactivity many times higher than the accident at Three Mile Island, leaving a legacy of potential cancers in the surrounding population.

Even today radioactive liquids are routinely poured directly into the soil as a permanent method of disposal. Highly contaminated wastes are still sitting in ruptured single-shell tanks waiting for disposition, and plans for construction of projects such as the grout facility and waste vitrification plant are constantly stretched out due to a lack of funds.

The 1988 fiscal year, for example, Mr. Chairman, the need for defense waste cleanup funds at Hanford is for $270 million, and the Administration's request only anticipates expenditures of $198 million at Hanford. This is $72 million shortfall in one fiscal year and one budget category alone. And this year is not out of the ordinary.

The problem arises because Congress has no agency other than DOE on which to base its own decisions. DOE sets its own stand-

ards of safety and cleanup. It implements these standards. It polices itself to make sure, allegedly, that the standards are met, and it establishes its own budget priorities. The Department does all of this with absolutely no outside regulatory supervision.

My bill, H.R. 2047 establishes an independent regulatory agency to perform these functions. It would establish safety standards for DOE nuclear facilities, having the authority to inspect the facilities to make sure they are safe and suspend any operations at any facility that does not protect the public safety, report to Congress on the status of the plants and on the budgets that would be required to fully implement its standards.

As I understand S. 1085, it would set up a three-person board to review standards set by DOE, investigate significant safety related events, issue recommendations to the Secretary for changes, and report to Congress. If the Secretary chooses not to implement the board's recommendations, the Department must justify this action to Congress.

I believe this is an extremely important element of the bill, making it difficult for the Secretary to simply ignore the board's recommendations due to higher priorities. In particular, eliminating exemptions based on cost of implementation after the first year, unless the President requests the needed funds and Congress fails to provide them, provides an important incentive to the Appropriations Committee to take the board's recommendations seriously.

Other important provisions that both of our bills share which I strongly endorse are the ability to obtain all of the information needed in the decision making process, ready access to the facilities, the ability to consult technical experts, and the authority to hold hearings and subpoena witnesses. I support all of these provisions and believe that such powers are essential if an independent oversight organization is to truly have the ability to fulfill its mandate. Without powers such as these, I fear we will create a paper tiger with little ability to truly elevate safety issues to a higher priority.

One suggestion I might make for provision which is included in my bill but not in S. 1085 is the direction for the agency to provide a safety-based budget report. This would not take the form of a budget request, but would simply serve as a measuring rod against which Congress can compare DOE's budget submission and make better informed decisions about appropriate budget priorities.

As a member of the Appropriations Committee in the House, I know that such a document would be very helpful to me in my efforts to make responsible appropriations decisions. I feel it would help other members as well.

To conclude, Mr. Chairman, I believe some type of independent oversight authority with substantial powers to ensure the safety of DOE facilities is essential if we are to restore public confidence and rebuild our defense production capability. We are both responding to the same urgency of the safety crisis which confronts the Department's defense nuclear facilities.

I look forward to working with you and Senator Adams to develop a joint strategy which I could help, with Congressman Eckart, to lead in the House of Representatives.

Thank you for allowing me to address your Committee. I might add that I strongly support the other three chapters in your bill and I would hope that in the House that Chairman Sharp and Chairman Nichols, who have jurisdiction—who have, by the way, indicated that they are very interested in moving on this subject matter this year—would include those important chapters in their consideration.

I might add that for a long time Brock Adams and I have worked together in the Congress, but when he was a Congressman and I was over on this side. I think we both agree that this situation in the State of Washington has really gotten out of hand and that public credibility there has really been lost because of the Department of Energy's failures. These have been widely documented in the press. There have been a series of articles written in leading newspapers in our State about not only the facilities in our State but across the country that clearly we have got a very major systemic type problem that has to be dealt with.

And so, again, I urge you as Chairman of this Committee to move this legislation. I think it is overdue and I think we need to move this as quickly as possible to help restore confidence in what the Department of Energy is doing.

Chairman GLENN. Thank you very much, gentlemen, both of you. I know we look forward to working together on this.

Let me put this in the proper perspective. All of us—I am sure both of you—and I certainly appreciate the job that DOE does. It is a very important job and I do not want these hearings to be taken as DOE-bashing. They are providing the nuclear defense for this country.

But Norm, as you pointed out, the problem has been production versus safety. Years ago when we were so concerned about whether we were going to have enough nuclear production facilities, we went wide open in this area, and safety concerns got second place, second billing. In the private, commercial nuclear electrical generating plants more emphasis was put on safety and safety review by the Nuclear Regulatory Commission that oversees that particular area.

But we have been very laggard in catching up with safety concerns in the DOE program, it seems to me, and that is what we are involved with. They must be made safe. We are not involved in just bashing this administration, although it has been 7 years and I think has been a long time in getting going on this. But it goes back into other administrations, too.

Part of it is the fact that we know more about this now. We have learned more about it. And so we want to work together with DOE. I guess my general feeling could be summed up by saying it does very little good to protect us from the Soviet Union with weapons production if we poison our own people in the process. That is what we are trying to correct.

It is not necessary—that is the point—because we know that we can and must correct this and we must lay it all out and define the problem, and that is what we are trying to do. So we do not need to lessen safety standards. We want to make sure that we are setting these standards. We want to work with DOE and I am sure you

want to. I pledge our support here and our cooperation, but they must be the prime movers. They must do it.

And we must have budgeting, and we cannot let OMB whack them down in budget concerns on things that have to be done. What we are trying to do is define this, and realizing the nature of the problem, try to sensitize people in the Congress and the administration—whatever administration is in office—that this is going to be a long-term effort, it is going to require our best efforts, it is going to be expensive, and we cannot put it off any longer.

Mr. DICKS. I just want to point out, I serve on the Defense Appropriations Subcommittee in the House, and I am afraid we have created not only a safety issue here—a significant safety issue—but this is a significant national security issue as well. What if the National Academy of Sciences in July comes in and says that the three reactors at Savannah River should not be operated, or must be operated at a very low level, and we still have a problem at Hanford?

Where are we going to get the materials to operate our nuclear weapons? Immediately we have a problem with a shortage of tritium. So this is not only a safety issue, I happen to believe it is a national security issue of the highest and most significant concern.

Yet, I do not want to blame this Administration totally, either, but I have not noticed that they have come up with any plan for new production reactors. In fact, if there has been any initiative taken here at all, it has come from the Congress to address this problem of what we are going to do to meet materials requirements in the future. So I think we have got not only a safety problem, but I think we may have a very serious national security problem as well.

Chairman GLENN. I have just a further statement and then we will get on to our other witnesses here. The Environmental Policy Institute put out a study here and they looked at the environmental safety and health spending of DOE and what they have asked for in the budget. They say that for the first time DOE has established a better budget format for explaining how the Department is allocating resources for environmental safety and health and the nuclear weapons program.

The change reflects a positive response to criticism that DOE is not taking the ES & H activities seriously. For instance, DOE provides for the first time an estimate of spending in this area spanning fiscal years 1984 through 1989.

I would summarize by saying that spending in the environmental safety and health field in DOE has gone up since 1984 from $500 million to $870 million in the fiscal year 1989 budget. But they follow in saying: "However, the budget does not provide overall estimates of costs to comply with various environmental laws and the current compliance schedule. The ES & H program, which is not included in the Atomic Defense Activities budget request, has grown from $44 million in fiscal year 1986 to $70 million in 1989," and so on through the report.

That is a down payment on what we are going to have to do, I think.

Senator ADAMS. You said billions in Ohio. I can tell you, in Washington State to clean up the military waste that has been generated for 40 years, the estimate is somewhere between $10 and

$20 billion. So we are not talking about a small time problem here. This is big money.

Chairman GLENN. And you have got Rocky Flats, Savannah River, and the other places around the whole loop that is involved in this whole weapons production program, too, so I am hoping if nothing else these hearings can sensitize people to the enormity of the task that is ahead of us here.

The DOE people that are here today, we are not here to climb on your back. We want to work with you. I will guarantee you that and I pledge my support to working with you on this, and to working for a proper budget for doing the job that I know you want to do as badly as we want you to do it.

So, thank you, gentlemen. I appreciate your support and I look forward to working with you.

Senator ADAMS. Thank you, Mr. Chairman. We appreciate being here this morning.

Chairman GLENN. Thank you.

We have a series of witnesses this morning. I will read their names off here and we will hear them in this order. J. Dexter Peach, Assistant Comptroller General, the U.S. General Accounting Office will be our first witness. You may come to the table, please.

Next will be Dr. John Ahearne, Vice President, Resources for the Future. Next after that will be Dan Reicher, Attorney for the Natural Resources Defense Council. After that, J. Winston Porter, Assistant Administrator, Solid Waste and Emergency Response, U.S. Environmental Protection Agency. And Joseph F. Salgado, Under Secretary of the U.S. Department of Energy. We welcome all of you, gentlemen, to the hearing this morning.

We have been joined by our senior member of the Committee here, Senator Roth. Do you have any statement you wish to make, Bill, before we go on?

Senator ROTH. No, thank you.

Chairman GLENN. Mr. Peach, you are accompanied by Mr. Fultz, and who else of your staff is here?

Mr. PEACH. I just have Mr. Fultz with me this morning, Mr. Chairman. He is our Associate Director responsible for our nuclear and electricity work and has appeared before this Committee before.

Chairman GLENN. Fine. Mr. Peach, you have appeared before and given excellent testimony before. We appreciate your coming back to the hearing again this morning here. I look forward to your statement in its entirety, or an abbreviated version. In either event, the entire statement will be in the record.[1]

TESTIMONY OF J. DEXTER PEACH, ASSISTANT COMPTROLLER GENERAL, U.S. GENERAL ACCOUNTING OFFICE, ACCOMPANIED BY KEITH FULTZ, ASSOCIATE DIRECTOR FOR NUCLEAR AND ELECTRICITY

Mr. PEACH. Mr. Chairman, I would like to proceed to summarize and highlight certain portions of my statement that we think are

[1] See p. 110.

important to emphasize. We are pleased to be here to testify on this important area, and my comments will focus primarily on Title I of the bill.

We have had a long history at GAO of supporting the need for independent oversight of various aspects of DOE's nuclear facilities. Many of these facilities are old. Some are operating beyond their expected life, and there have been many unresolved concerns about operational safety and environmental problems.

The scope and the importance of these concerns, combined with the age issue, caused us to not only restate our positions on need for independent oversight, but also to recommend that DOE develop a strategy for its defense complex which defines the universe of the problems it faces and presents an action plan with timeframes and cost estimates for upgrading or building new facilities.

Brock Adams in his statement referred to the public support question, and we see taking action in these kinds of areas as key to building the public support that will allow for continued operation of these important facilities. We believe that any oversight approach, to be effective, should have five key elements: independence, technical expertise, ability to perform reviews of DOE facilities as needed, clear authority to require DOE to address the organization's findings and recommendations, and a system to provide public access to the organization's findings and recommendations.

The legislation you have submitted creating a Nuclear Safety Board does address each of these elements and has, therefore, the potential to be an effective mechanism for oversight of DOE's nuclear facilities. These criteria, which I will define and describe in a little bit more detail, Mr. Chairman, are keys, we think, to evaluating any other proposals that may be put forward to deal with this question of independent oversight.

I would like to spend just a few minutes talking about our past positions and talking in detail about the criteria that we feel are important to include in any effective oversight mechanism, plus a few observations we have on fine-tuning the bill.

As my testimony highlights in more detail, Mr. Chairman, our position on independent oversight goes back to 1981. We have made recommendations, always based on further evidence of lack of attention to safety related issues, at frequent intervals since then. Most recently we testified before this Committee at your March 1987 hearings.

Mr. Chairman, we find ourselves here today considering legislation to provide independent oversight of DOE's nuclear facilities because of DOE's reluctance to act on safety-related problems and issues pointed out by GAO and others over the years.

Under Secretary Herrington, DOE's position has moderated, with the most notable action being the creation of an Assistant Secretary for Environment, Safety, and Health in 1985, while still at that time continuing to resist independent outside oversight. Now DOE appears ready to further strengthen the Assistant Secretary's role and also to accept independent oversight.

This change has occurred, however, only as it has become increasingly evident that legislation mandating independent oversight is likely. The credibility problem created by DOE's inaction through the years does demonstrate clearly, in our view, that a leg-

islatively mandated independent oversight capability is needed to assure that adequate oversight will continue as changes occur in Administration and DOE leadership. And what I am saying, Mr. Chairman, very simply is that legislation of some form is needed to make sure that we have this kind of oversight that will continue into the future.

Let me spend just a few minutes on the five criteria that we have set out and why we think they are important. Independence from DOE means that the organization must be structurally distinct and separate from DOE. This is important so it is visibly removed from DOE's influence in funding, staffing, and setting of safety agendas. Only in this way can conflicts between DOE's programmatic and safety goals be prevented.

In the past we have pointed out that such conflicts can and do occur. For example, during the 1970's DOE considered closing the Fernald plant in Ohio. As a result, it did not make capital improvements and equipment became obsolete. In the early 1980's production goals increased, putting a strain on the plant's resources. According to DOE's own documents, Fernald's management emphasized production over workers' safety and health concerns.

A second element is technical capability. Any oversight organization must have technical knowledge and capability to fully understand how DOE's facilities are designed and operated and what the safety ramifications are of their operation. It is particularly important in overseeing the unique facilities and operations that DOE manages. Such expertise is necessary so that sound safety assessments are made and so the organization is not too dependent on DOE's information for developing its own findings and recommendations. This technical expertise must exist not only at the top level where decisions are made but at the staff level where detailed analytic work is performed. Sufficient staffing is also important so that the technical staff is not limited to cursory reviews.

Third, the organization must have the ability to perform reviews of DOE facilities as needed. Reviews can range from an annual review to continual day-to-day oversight, depending on the nature of the issues being addressed. These reviews are important to maintain a working knowledge of DOE's safety issues and to assess DOE's response to recommendations. The organization's staff will also develop a better understanding of how DOE operates on a continuing basis, rather than on a one-time or sporadic basis. Therefore, the organization could immediately respond to safety concerns. An important factor in the organization's ability to perform reviews when needed is clear access to DOE's facilities and records. Without this access, timely and complete assessments may not be possible.

Fourth, the organization should have clear authority to require DOE to address the organization's findings and recommendations. Such accountability is important so that DOE will seriously consider and act on these findings and recommendations. Without such influence, the organization could easily become a DOE consultant-type organization, which could be a drawback. For example, DOE established the Roddis panel, an outside group of nuclear experts, to review the safety of the N-reactor in Washington. The panel raised a number of fundamental issues regarding safety aspects of

the N-reactor and made recommendations to improve its operations. DOE was not required to act on the recommendations, but several months after receiving the panel report, DOE temporarily shut down the reactor ahead of schedule to upgrade safety systems. This upgrade included implementing some of the panel's recommendations. However, there is now concern that while DOE has begun to implement those recommendations, all will not be complete prior to the planned restart of the reactor.

Lastly, the findings and recommendations, if they are not classified for legitimate reason, should be publicly available. This is important so that Congress and the public can have a better understanding of the problems DOE faces and the risk in operating DOE nuclear facilities. Public disclosure of safety issues as they are identified will avoid piecemeal disclosures, as has happened in the past, and will also keep the Congress and the public fully informed about the condition of DOE's facilities.

Mr. Chairman, as my statement amplifies on, we believe that your proposal for a Nuclear Safety Board does meet each of these five key elements which we think are important to consider in evaluating any other proposals that may be put forth.

Let me mention at least two areas where we think clarification could help in the bill. One of the things our past work has emphasized that we think is very important is DOE's efforts to develop safety analysis reports for each facility, and we have pointed out how DOE has not always done that in a timely manner and still does not have them completed for some facilities.

We think these are key documents, and while the bill could be read to incorporate their review by the Board, we think it would be useful to incorporate by specific reference the requirement for this type of board or organization to review these documents in particular and determine their adequacy.

A second area has to do with what health and safety standards the board will use in assessing the facilities. The bill tasks the board with annually reviewing and evaluating the implementation of health and safety standards as well as all applicable DOE orders at each facility. In addition, it directs the National Academy of Sciences or some other group of experts to evaluate and interpret the differences between NRC regulations and DOE orders governing safety. However, there is no clear indication as to whether the board should use the results of this analysis, establish its own standards, rely on DOE orders, or use existing NRC guidance for commercial nuclear facilities. We believe a more clear definition of exactly what standards the board should apply would be appropriate in the bill.

There are other pieces of legislation, some referred to this morning, that may be submitted. As I indicated, we think that the elements that we have laid out, our criteria, are important to consider in any legislation that is put forward, and we clearly believe the legislation you have put before this committee meets all of these key elements.

We would like to close by commending you, Mr. Chairman, for consistently being in the forefront of this effort. We believe your perseverance on this issue over the years has brought us to this point where legislation in this area looks to be a reality and we

hope to see that it will move forward, and we look forward to working with you on it.

We would be pleased to respond to any questions you have.

Chairman GLENN. Thank you very much, Mr. Peach.

Mr. Fultz, do you have any additional comment you wish to make?

Mr. FULTZ. No, I do not.

Chairman GLENN. Thank you. I think the five areas you pointed out—independence, expertise, review of DOE as needed, the authority, and a system of public access—those are things that I agree should be a key part of whatever it is we pass and however it is modified in the whole process.

What would be the most effective use of an independent oversight board? Should they review DOE proposals, basically, or should they initiate proposals on their on? Should it be a combination of both? How do you see that working most effectively?

You have looked at this thing over at the NRC and how the ACRS works, and while this is not an exact duplicate of that, nevertheless, there is some track record there. Do you think this board should be an initiator of standards or should they be mainly a reviewer of DOE standards to make sure they are up to a certain level?

Mr. PEACH. Mr. Chairman, I would opt for the concept of both. I think they should be in a position to review DOE proposals. For example, let's say DOE does decide to propose a new production reactor. Certainly, this board could be an integral part of reviewing that and assuring that steps taken in design and other things are adequate.

I think it would also be in a position, if safety-related concerns are brought to their attention through other avenues, and they believe there is adequate information to support the need for an investigation, that they should have the opportunity and the mandate, in effect, to undertake those types of investigations. So I see them playing both types of roles.

Chairman GLENN. The types of facilities are not standard facilities all over the country—Savannah River, Hanford, Fernald, Rocky Flats—they all perform a different function in this whole chain, so I know that you cannot just say that we have one set of rules that applies to everybody.

Do you have recommendations for an independent oversight board's review of these SAR's that would apply at each plant? Can an independent safety board develop a uniform safety analysis report that fits all of these DOE defense facilities?

Mr. PEACH. There is one approach I could suggest to you that gets at this, Mr. Chairman. You set up this board and they have to start operating. You have the issue of what kind of standards they have to apply. Now, our work has demonstrated that there are problems even with DOE complying with its own internal standards that it has put forward with respect to what it is supposed to be doing.

A certain departure point for a new board could be to start looking at it from the standpoint of DOE's compliance with its own standards. As they look at those standards, the Board could also be evaluating whether those standards are what they ought to be, so

that they can be in a position of making recommendations to the Secretary, both on actions to comply with standards, and on changes that should be made to the standards to bring them up to what they ought to be.

So I think they could make recommendations and over time bring about improvements in both areas.

Chairman GLENN. What kind of level of expertise should they have? You mentioned that as your No. 2 item here—they have to have the expertise to do the job. That is obvious. But I think it is something else when you start fleshing this thing out and trying putting the people into the slots.

What is an appropriate staffing level? Should they be lean and mean? I do not want to create a giant monster here that is another mini-DOE to monitor the first one.

Mr. PEACH. I think there is a stress point that has to be looked at more carefully than we have been able to look at it. I have seen widely ranging numbers with respect to what resources might be needed in this area. I think the stress point that needs to be looked at is the extent to which DOE moves to strengthen their own internal environmental, health, and safety capability, what they are doing, and then what type of a gap that leaves for this independent board to review.

In other words, if DOE was to set up a system of having independent reporting to the Assistant Secretary for Environment, Safety, and Health onsite at locations, for example, to give them independent feedback in a way that they do not have now, then this may allow the Board to operate more in a review mode.

If DOE does not move further, then this board is going to need more capability so that maybe you can have some independent onsite resident people.

Chairman GLENN. So we need a little flexibility depending on DOE's response?

Mr. PEACH. It depends on how they respond and how you can make that fit together as to how "lean" the Board can be or how much capability it is going to need.

Chairman GLENN. Do you see this as possibly sort of a permanent Roddis panel of that size, or should it be much larger than that or what?

Mr. PEACH. I think if you look at the panel-type concept, I think that is a reasonable size—about the size of the Roddis panel. I do not think you want to get it so large that it is unwieldy. You suggest in your bill right now a board of three members. The Roddis panel, I believe, had six members. But I think when you are looking at that neighborhood of between three and seven, I think you get to a question of getting unwieldy if it gets too large.

Chairman GLENN. You mentioned authority, also. Do you feel this legislation, after your review of it, has the clear authority to require DOE to address the independent oversight board's findings and recommendations?

Mr. PEACH. Yes, I do. I think the key—for one thing—is making clear that the recommendations, unless there is reason to classify them, will be publicly available and that the Secretary be required to publicly address the recommendations in terms of what action they plan to take, or if they do not plan to take action, what is the

reason for it. That gives Congress then the opportunity clearly to be in a good position to exercise oversight as to how things are working.

Chairman GLENN. One of the things I can see coming up already is how some of this is a difficult consideration with regard to security. This is our nuclear weapons program and there are parts of it that are going to have to be secure and you have to balance that off against the public disclosure that you say is an important thing. And I agree that it is an important thing, disclosure of the safety issues, what we are doing with them.

I think we have to be very careful in this area. We do not want a coverup under security rubric that we too often find in the military. On the other hand, we do not want to give away security secrets either. So that may be one that is going to be a little bit difficult.

Do you have any comments on that? And also, how do we take care of the private contractors that run most of these things and make sure that they live up to what the standards are? I guess I would make that a DOE responsibility to see that the contractors perform. They are contracted with DOE so DOE is the overseer of whether they perform or do not perform and hold their feet to the fire on that.

But how about this public disclosure. Do you see any difficulties there?

Mr. PEACH. Well, it will just be an issue that will have to be dealt with, and it is one that has to be dealt with in a variety of other circumstances. Even in areas where we are dealing with classified information, for example, in our own reports sometimes we develop both a classified and an unclassified version. So, in effect, you can digest the gist of what the problems are and what the issues are and provide an unclassified version even where you deal with classified material.

I think it is just one of those questions that, as you know, has to be handled very carefully so that unauthorized disclosures are not made. In the Congress, you are provided the classified information that must be protected to ensure that too much material is not being made public.

Chairman GLENN. Well, I am extremely concerned about the security aspects of this. I do not want to give away our nuclear secrets and development of weapons and so on. On the other hand, one of the reasons we got in the bind we are in right now is because decade after decade after decade we went along with people saying, we have got to have production, we have got to have security, we cannot have it out, nobody can look at it. And so safety got short shrift over here on the side.

Gradually that accumulated over several decades—35 years or so in some of these plants—and we know a lot more about some of these hazards now and so it is something that we cannot let now be swept under the rug again by security concerns. That is going to be a fine balance we will have to hit as we go along.

Mr. PEACH. Mr. Chairman, one thing I would like to get on the record here, and I think it has been alluded to in several regards. I would subscribe to your comment, for example, that DOE should be in a key position of holding the contractors accountable for how

they are operating the plants in a safe manner. But one of the things that we have found in a variety of highly technical areas is that complacency can set in in the safety area because of competing objectives and because of the complacency that comes if everything has been operating all along in a certain mode for a period of years.

We have seen that not only with what has happened at DOE's nuclear facilities. We saw that same kind of example with respect to the space shuttle in another technical area. And that is one of the reasons why you need to have at some point some independent bodies that are looking at activities to try to bring people's focus back on the issue that safety also has to be a paramount concern. And I think this is an important action that you are trying to take here in that regard.

Chairman GLENN. I am finished with my questions, but before I turn this over to Senator Roth, let me just compliment GAO on the job you have done on this. We started out asking for some studies by GAO that you participated in, I believe, when the original Fernald problem was brought to our attention several years ago. That started things off and we concentrated on that awhile, and then the last study on this and went nationwide on the whole system, went to Hanford, Savannah River, Rocky Flats, and every place else.

Out of that study we saw that this was not just a unique situation at Fernald. It is a situation that applies all over the country, and that is what triggered some of this interest. And GAO has been key to that and you have done an excellent job in that area and I want to compliment you here this morning.

Mr. PEACH. We have just been pleased to be a part of it, Mr. Chairman.

Senator ROTH. Mr. Peach, I think there is a fairly broad consensus that we need some kind of independent overview, that it will help take care of the problems you alluded to in your testimony.

On the question of complacency, I am not as confident that an independent agency over the long term is the total answer there. In other words, after years pass by there is a tendency of a close relationship to develop in the oversight authority and the agency itself that does not always give that total independence that we would like.

One of my concerns about this approach—and I have not made any final decision, because as I said, I strongly support independent oversight—is that every time we have a problem in Government we create a new agency, a new commission, a new entity of some sort. And as a result I think our Government is not structured to meet the problems of the 1990's.

We have here a serious problem. I do not see how anybody can object to that conclusion. But the question in my mind, are we better off creating a new board or are there other alternatives? For example, would it be appropriate for the NRC or some other existing agency to undertake this responsibility as well? Do you care to comment on that?

Mr. PEACH. In preparing for this testimony I tried to look at the question of what options are available. One of the options is certainly to create a new organization. Another option is to give a re-

sponsibility to some existing organization. NRC is one candidate. Another suggested candidate that has been put forward is the Advisory Committee on Reactor Safeguards, which is an advisory group to NRC on technical nuclear issues, and just give them the responsibility directly.

In each of those areas, though, it is quite clear from the material I have seen, or the discussions, that each of those units suggests there would be a substantial increase in terms of their budget in order to carry out this additional oversight. So I think you would also have a question if you add responsibilities to these organizations, they would need additional resources and the cost might be more than the $5 million proposed in the bill.

Senator ROTH. I do not understand that reasoning. Why would it cost more on an existing agency? For example, I am told in the case of West Germany that their basic Government structure has been pretty much the same the last 75 to 100 years, that as new problems occur they use the current structure.

I want to make clear, I am very much in favor of doing something independently, but I really do have some very serious problems with adding something, because nobody really watches over all of these. There are just too many agencies, too many commissions, and once they are born they never die. A few years ago, with the cooperation of GAO and under the leadership of Senator Metcalf from Montana, we tried to do away with some of these commissions and boards and activities. One found that they did not stay dead.

So I do not really understand why it should cost more to put it in existing structure as a matter of organization than in a new one, because I think the tendency of a new organization as time goes on is always to grow, build and increase.

Mr. PEACH. I think, sir, the organizations that I have suggested could better address the question of why they feel this is necessary. Our discussions have been, in effect, preliminary discussions just to try to find out how they feel about this area and get some understanding. But we have seen numbers that have been presented, back-of-the-envelope calculations, that you could be talking millions of additional expense to add to the staff to take on these additional DOE reactor responsibilities above and beyond what they are doing.

In NRC's case, I think they would suggest, among other things, that the DOE reactors are different, being production reactors. Therefore, the standards which apply to commercial reactors would have to be revised. They would have an extensive process to look at exactly how they would carry out regulatory responsibilities, and would have to bring on additional staff to look at those facilities, while continuing to do everything else they are doing.

But that is the general position that they have taken in the discussions we have held with them.

Senator ROTH. Well, it is my understanding that DOE Secretary Herrington has endorsed some form of outside review but does not agree with the proposal before us. Is there any middle ground between the Chairman's proposal and what the Secretary is discussing? Do you see any approaches that could result in a consensus?

Mr. PEACH. If you looked at any other options, the one other approach you could probably take, and I would submit still should be legislatively established, would be to establish some form of an independent advisory board similar to the Advisory Committee or Reactor Safeguards which advises NRC. This would provide for highly qualified, technical people that would report to the Secretary, make recommendations to the Secretary that would be publicly available, and the Secretary would have to publicly respond to the recommendations.

Still, if that was set up, I would think that you need to set it up legislatively and to assure that it is funded separately from the Department. This is to avoid internal departmental funding conflicts and to make sure that they are getting the resources they need to adequately do their job. So it does have a lot of similarities to what is included in this legislation.

I go back to the five criteria I set out in terms of things that you need to consider, however you set this up.

Senator ROTH. Well, I agree with you, it ought to be done legislatively. Otherwise, some future Secretary could quickly revoke it.

Mr. PEACH. That is right. It could quickly go away.

Senator ROTH. Let me ask you this question. What if the DOE disagrees with the independent board's recommendations? Do you see any need for a third-party arbiter to resolve such disputes? Now, as I understand it, you can go to the Congress. But that is a pretty politicized approach. And frankly, as you well know, in safety matters there are often honest differences of opinion. It is not a question of black or white. There can be significant differences.

Do you see any need of some arbiter?

Mr. PEACH. At this point I would have to say no. I am not quite sure how that would fit in, because I do not know whether you could look at an arbiter to be a tie-breaker in this regard. One of the ways that you want to set up this independent group is that you want to place a high premium—which the legislation you have before you does—on the technical qualifications. You want people that are placed there because they are well-qualified technically in the nuclear area, and represent the variety of views and disciplines that you need to arrive at good judgments on these issues.

I think if you have that type of group they should be making well-reasoned recommendations based on what they are looking at and the Secretary, I think, will have to be in an awfully strong position if they feel that a recommendation should be resisted.

Now, the legislation you have before you has fairly tight standards. It does say, I believe, that either the action has to be infeasible—the Secretary has to determine it is not technically feasible—or they can defer action on it for one year because of a funding limitation. But within the second year they have to put it into their budget so that the Congress can consider whether they want to budget for that or not.

Senator ROTH. You see, I do not think any of those really address honest technological differences. And having had some experience in the past in the private sector, I do know that there are cases where there are genuine differences of opinion as to safety. What concerns me is if we look for a political solution we may not neces-

sarily get the best safety answer, and I just wondered whether it was possible for National Science or some group like that to——

Mr. PEACH. I think if the issue was difficult enough they could be called in, but I am not sure they should be permanently written into the bill. This bill, at least, has a lot tighter standards than a lot of others. One of the areas I work in also at GAO is the transportation area which gets us into the National Transportation Safety Board and the Federal Aviation Administration and we have been heavily involved in work in that area, and certainly in that case you have a board looking at safety issues and it basically makes recommendations.

The agency does have to respond to the recommendations as to what they will do or not do but they do, not have to accept them, necessarily, either. It just opens up a public debate if they determine that they do not want to act on the recommendations and it provides the opportunity for congressional oversight or other types of actions. So this is a tighter standard in this bill than exists there, I think.

Senator ROTH. Thank you.

Chairman GLENN. Thank you, Senator Roth. Just one other area I wanted to look into here, and this is some information we received just this morning.

We received word of a report that was prepared in the late 1970's concerning the plutonium finishing plant, the PFP at Hanford. This report said the plant might collapse during in an earthquake, resulting in the spread of deadly plutonium to surrounding areas and it resulted in the shutdown of the PFP. They shut it down as a result of some of those concerns, but in 1983 it was opened up again and operated until the fall of 1986, just last fall.

As I understand it, they had a criticality violation at the purex plant and that resulted in the shutdown of this facility once again, the PFP. It is my understanding that there has been a continuing discussion on this at DOE about restarting the facility which processes materials produced by the N-reactor, and I understand that just yesterday they made a decision—made by the Under Secretary for Defense Programs who will be here later today—to extend current safety studies at the PFP until August when a decision is to be made on the future of the plant. In the meantime, they are proposing to restart the plant for the purpose of processing existing scrap materials at the site.

Now, my question is not the wisdom of that, but whether this kind of information was shared with you when you were out there. You visited the Hanford plant. GAO has been out there a number of times. Did DOE ever let GAO know about the concerns, about earthquake concerns out in that area?

Mr. FULTZ. To my knowledge, they did not, sir.

Chairman GLENN. Did not?

Mr. FULTZ. Did not.

Chairman GLENN. Should not they have done that? Would not that have been important to your deliberations out there?

Mr. FULTZ. Given the seriousness of what you have just described, I would certainly think they should have, yes.

Mr. PEACH. I might add, this is one area that does not necessarily have some uniqueness. I believe they have had problems before

at facilities at Rocky Flats, for example, determining that they were not constructed to more current earthquake standards and then going back with respect to what they need to do about that.

Chairman GLENN. The last time you appeared before the Committee you had interviewed some high level DOE personnel regarding health and safety matters. Was it your understanding that they had that National Academy of Sciences letter on the Savannah River reactors, and did they share the results of that letter with you at that time?

Mr. FULTZ. They did not share it with us, sir. No.

Chairman GLENN. Did they have the letter at that time; do you know?

Mr. FULTZ. It is my recollection that they did, yes.

Chairman GLENN. Was that not important for you to know, as part of your investigation? Why would they then not let you know that?

Mr. FULTZ. I think you would have to ask them why they did not let us know. I certainly agree that it was important. I would add that when we were conducting our review of the Savannah River complex, which we testified about before you on March 12, we were not informed of the initial reduction in power of the Savannah River reactors.

Chairman GLENN. Well, we have got to have a frankness back and forth on this and working together if we are going to solve these things. I hate to have to dig these things out step by step by step.

Mr. PEACH. We became aware in Savannah River of the power reduction issue first, before it was reduced the second time based on the National Academy of Sciences work. We have approached the National Academy of Sciences to discuss their work. But at that point in time they were very guarded with any responses that they would give to us about the work they were doing at DOE because it is their policy not to discuss the results of their work until it has been reviewed by the Academy.

Chairman GLENN. Well, we have got to work together on these things and it seems to me we have to be frank with each other, with the Congress, with the GAO and with DOE. That flow of information and frankness has to be a two-way street. If we are going to restore some confidence in DOE and their ability to clean up this thing and handle it they have got to be frank with us and they cannot be just hiding things and making you dig things out on behalf of the Congress every time we have a problem. So I would hope that could be a message to DOE also.

Thank you very much. You have been very helpful and we look forward to working with you in this area.

Mr. PEACH. Thank you.

Chairman GLENN. Our next witness is Dr. John Ahearne, vice president, Resources for the Future, Inc.

Dr. Ahearne, welcome to the committee again. We look forward to your testimony, either abridged or in full. It will be included, in any event, in the record in its entirety.

TESTIMONY OF JOHN F. AHEARNE, PH.D., VICE PRESIDENT, RESOURCES FOR THE FUTURE, INC.

Dr. AHEARNE. Thank you, Senator.

I would like to comment on general provisions, several portions of this Act, and I have also detailed comments which I would like to submit for the record.[1]

Chairman GLENN. They will be included in the record, subject to no objection.

Dr. AHEARNE. Fundamentally, I believe this act takes a step in a necessary direction. That direction is to provide independent safety review for nuclear facilities operated by the Department of Energy. These facilities, which range from small research reactors through reprocessing plants and a very large production reactor, the N-reactor at Hanford, have been a source of concern among many in the nuclear community for years.

A series of GAO reports has reflected these concerns. In addition, DOE studies have also expressed considerable reservation about the quality of operation of these facilities. I believe that DOE finds itself in a difficult situation. Operators of technology frequently have difficulty standing back and objectively analyzing what should be done to improve the safety of their operations. We have seen this in commercial nuclear power, in space operations, and may well, unless additional steps are taken, end up seeing it with respect to the DOE's operations.

The second difficulty the DOE has is that the pressure on the use of the facilities is to provide materials for the national defense. The DOE in this sense is a service organization for the Defense Department, under the somewhat unusual arrangement whereby the cost of operating these facilities shows up in the DOE budget rather than the DOD budget.

I do not have familiarity with the actual budget negotiations in recent years. However, I believe that DOE first has not proposed the necessary capital investment or increased operating costs, or second, has not had such proposals approved.

The act currently under discussion provides the fundamentally sound step of requesting independent oversight and recommendations. It attempts to provide a forcing mechanism to ensure that the Energy Department will take the steps necessary for safe operation of its nuclear facilities. In my detailed comments I have raised a number of questions with regard to the bill as submitted. I will not comment on titles II and IV other than in the written comments because, as I understand, today is reserved for titles I and III.

I have included a written comment on title III but really have very little to say about it because I am insufficiently familiar with the RCRA. In this testimony I will focus only on title I.

With respect to title I, first, the principal change I believe necessary is to address what standards are to be applied by the independent oversight group. The standard on which the NRC's regulations are based is to provide adequate protection to the public health and safety. Since this standard has been in existence for

---

[1] See p. 130.

many years through the Atomic Energy Act, there is by now a reasonably well developed record of judicial decisions, agency interpretation and congressional history which builds a framework for what that phrase means.

I believe it is a sound standard to be used for application to the DOE's facilities. Congress must recognize that whatever standard is chosen must then be expanded into a series of guides or review documents against which DOE internal regulations and operating practice and, if new plants are built, design and construction practices must be measured.

Second, adequate resources must be supplied. It is not sufficient to charge an independent group with oversight responsibilities and assume those responsibilities can then be carried out in the absence of adequate resources. I believe that to do the review and necessary followup exercises, which I believe must include some level of inspection, will require several hundred people. I believe that the organization should be funded accordingly.

Finally, I would like to add that, as I said in the beginning, this Act is a necessary and good step in the right direction. I believe that logic would impel one to conclude the appropriate step would be to imbed the requirement for independent oversight within the Nuclear Regulatory Commission.

The experience in review and inspection is already there, and a body of regulation which can be more easily modified to address the DOE facilities is already there. Modification of existing regulations would be much easier than building a whole new set of documents from a blank page.

There are, however, several modifications that would have to be made were the oversight embedded within the NRC: First, the review and examination should be exempt from the Administrative Procedures Act.

Second, whatever forcing mechanism is legislated must incorporate the fact that the DOE does not generate its own funds but must rely upon Congress to provide the funds.

Third, necessary restrictions upon dissemination of classified information must be included.

Fourth, although not necessary for the oversight step, I cannot miss the opportunity to note that making the NRC a single administrator agency would assist not only in this DOE overview, but throughout the NRC's operations.

Thank you, Mr. Chairman, for this opportunity to provide my comments on a bill which proposes some long overdue improvements.

Chairman GLENN. Thank you very much, Dr. Ahearne.

You are a former Chairman of the Nuclear Regulatory Commission?

Dr. AHEARNE. Yes, Mr. Chairman.

Chairman GLENN. So you do not come as a neophyte to this area of nuclear concerns.

And the ACRS was operating when you were at the NRC?

Dr. AHEARNE. The ACRS has been in existence from the formation of the AEC, over 20 years ago.

Chairman GLENN. How has that worked? I would like your opinion on how that has worked as far as overseeing the safety regula-

tions that NRC put out. Has it been very effective? Less effective than you would like to see it? Or is it a model we should follow here?

I know there are some differences. There is a split on functions here that the old Atomic Energy Act, when it was broken up there was a split in functions here.

Give me your opinion on ACRS.

Dr. AHEARNE. Yes. I would be glad to.

Chairman GLENN. That is the Advisory Committee on Reactors Safeguards, just for everybody's benefit.

Dr. AHEARNE. About a year and a half ago I was a member of a small group that at the ACRS' instigation reviewed the ACRS and tried to address some of the questions you just asked. The ACRS when it first got started in its early years, 5 to 10 years, I think performed a very valuable function because at that time there was not much known about how to build a set of regulations to review nuclear power, and in that guise the ACRS essentially embodied the best minds, the most knowledgeable people in the United States with respect to nuclear operations.

Since then the ACRS has continued to work very, very hard as an advisory committee. The average time that a member spends is 125 days a year, which is extraordinary for an advisory committee.

Chairman GLENN. Substantial.

Dr. AHEARNE. And they still maintain a body of some of the principal experts in the country. But they have not tended to be, over the last 10 years, particularly effective. And that is for a variety of reasons. One reason is that the detailed problems that the operations of plants have tended to raise have been ones that require extremely narrow focused knowledge, experts in a particular type of pump, for example.

The ACRS principal interaction then has tended to be with the lower levels of the NRC staff as opposed to providing overall guidance to the NRC.

Chairman GLENN. Is that going to pose a difficulty in the independent board that we are proposing so set up here? Because we are going to be in different levels of expertise. If you compare NRC's work, you are working with—I will not say standardized plants, you are not.

Dr. AHEARNE. Yes, there are a variety of different types.

Chairman GLENN. But they are more similar than the functions within DOE will be. Is this level of expertise going to be a difficulty?

Dr. AHEARNE. Well, that was one of the reasons I suggested in my remarks that realistically, whether it is embedded within the NRC, an independent agency, or part independent and part pulling in DOE, I think to do the jobs you have laid on will take several hundred people.

Chairman GLENN. That is a bigger organization than we had thought might be necessary. I am glad to have your view on that because that is something we may want to review and something Senator Roth would also.

Dr. AHEARNE. It is not only that they are different types of plants across the spectrum of the DOE, but frankly, they have been shielded from safety review for so long, that as I think the Roddis

panel—if you read through the Roddis panel reports, which I have, and talk to some of the members, you can just reflect astonishment on the part of those people.

There were knowledgeable people looking, and the problems are so great. They are not saying that well, here are a few problems, if you look at those. There are just problems replete. It is as though you had a commercial nuclear power plant that had been forgotten for 15 years and suddenly the NRC inspectors went in. Where would they begin? Well, they would just have page after page after page of problems.

Well, that is, I think, what is going to happen when good oversight for safety operation begins to look in detail at any of these plants.

Chairman GLENN. It has been suggested by some people we should have a super-investigative group like this that would oversee everything nuclear, whether it was defense, commercial, private power plants. In other words, it would be an ACRS expanded and given a new role that would provide both of these areas.

Now, when the Atomic Energy Commission was broken up they split these functions out to defense and commercial.

Dr. AHEARNE. Right.

Chairman GLENN. Do you think it is wise to keep it that way?

Dr. AHEARNE. I do not think it is wise to keep them separate, no. I think we have seen just too many problems by having the defense side shielded in that sense. But I do have to take exception. I do not think the ACRS as a group is a model for coming up with requirements for an operating agency to take action. They are sort of a large Roddis panel. That is, they reflect and come up after a year or 18 months with a set of comments.

Chairman GLENN. You would not propose something like an ACRS that would apply both to DOE and to NRC?

Dr. AHEARNE. I have no problem with the NRC. As I tried to recommend, I think the NRC is the right place to imbed this requirement, and then the ACRS would be looking over both of them. As a matter of fact, over the years the ACRS has provided advice to the Naval Reactors Division of the DOE. And the NRC has provided informal review to the Naval Reactors.

So that looking at defense areas is not unique to either of those groups. It has been done.

Chairman GLENN. But I think from what you said, too, you also agree that it is important to keep this as an independent group, rather than just an internal function of DOE itself?

Dr. AHEARNE. Absolutely. I think that we have just learned in too many areas, some of which I know well, some of which you know very well, that when you have the operator also trying to be responsible for safe operation, there is too great a conflict.

Chairman GLENN. Thank you very much.

Senator Roth.

Senator ROTH. Yes. Dr. Ahearne, if I understand your testimony, I think we are all in agreement that the oversight should be independent and that it should be legislated so that some future administration cannot revoke without it congressional action.

I go back to the question I raised earlier of my concern to keep adding new boards and agencies to do an important job. Is there

any reason why NRC could not be the principal agency that takes this responsibility?

Dr. AHEARNE. Well, as I suggested in my testimony, for me, I do not see why. I will defer to you people who are far more knowledgeable on what can actually be legislated.

Senator ROTH. Well, I think it is not so much, to be candid, a legislative matter but a safety matter, where we need technical expertise and to try to provide the kind of advice and action that really will help make these facilities more secure.

Again, you mentioned in your opening remarks and in answer to questions that it would take several hundred people.

Dr. AHEARNE. I think it would.

Senator ROTH. So that it would be unrealistic for us to start a new commission and say it would cost something like $5 million, if we have to have several hundred people.

Dr. AHEARNE. My estimate for the $5 million was that at most you could get 100 for $5 million. That would be across a spectrum from all types of support staff. More realistically, you would probably get 75, so I think that is inadequate.

Senator ROTH. So what you are really saying is that to do the job it has to be more ambitious than what we are considering here?

Dr. AHEARNE. I think so. I think it is a level of realism to make sure that the organization be funded adequately to start with. Now, to put it in perspective, you have to recognize that a replacement for any of these large production plants will require the investment of several billion dollars.

Senator ROTH. Sure.

Dr. AHEARNE. The hazards, the environmental damage that can occur from a major accident at one of these plants could very easily run the same amounts, so that the dollar cost in comparison to what you are trying to achieve is really very small.

Senator ROTH. Well, when you are involved in safety I think you are perfectly correct. The main question is that we get what we need, not more than we need nor less.

Dr. AHEARNE. Right.

Senator ROTH. Going back to using, for example, the NRC. Wouldn't some of their existing facilities and personnel be useful in this kind of an operation?

Dr. AHEARNE. Yes. I think that the NRC ought to be able to do it with less expenditure of funds and fewer additional people because they would have a certain amount of the expert knowledge already embedded and ought to be able to have that shift over from some of the areas that, frankly, since there are not very many new commercial plants coming on line——

Senator ROTH. Well, at least on the surface that seems true to me, that when you have an agency already in existence, discharging some of the same responsibilities, admittedly in a somewhat difference circumstance, that it may give us a better opportunity to build the kind of long-term entity that will be necessary.

Dr. AHEARNE. I think that is correct. Although there undoubtedly would need to be some additional resources applied to the NRC.

Senator ROTH. Obviously, when you give them more responsibility, more facilities to overview, assuming that the people are being fully utilized, it would take more personnel.

Let me ask, again, a question I asked Mr. Peach. If there is an honest difference of opinion between DOE and the new oversight organization, whether it is NRC or a board, do you believe a third party like the National Academy of Science could serve as an arbiter?

Dr. AHEARNE. I understand your concern, Senator. I think there are two kinds of disputes which might occur. The first are on the relatively inexpensive—one agency is stubborn that this ought to be done, the other agency is stubborn it should not be done, but the total cost is small. I think in that case it does not make sense to try to bring in an outside arbiter.

It seems to me that that is the type of problem that the DOE ought to go ahead and fund, or at least put into the budget and it could be struck out if the congressional staff in their review decides that it is unreasonable. But the critical question comes on a major problem, major issue, for example, if the independent agency would say that a particular major facility must be shut down because of a series of untaken steps, and the DOE would say, impossible, we disagree because we do not believe that those issues are as strong as you claim they are.

At that stage, if the two agencies cannot resolve that, then you would have to refer it to some other organization, and the current structure, the way things are done, the National Research Council, which is the operating arm, is the one one turns to. It, unfortunately, has a mixed record. Sometimes it has been very good and other times it has taken many, many years. It is not immune from political interactions my itself.

So I think what you have identified is, there is no perfect solution.

Senator ROTH. One final question, as long as the chairman has not returned, I have heard it said that among the best operated facilities are the French, that they have in this whole area of nuclear done as well as anyone. Are there any lessons to learn from them? How do they handle this kind of a problem?

Dr. AHEARNE. I am quite familiar with the French commercial operation. I am less familiar with the French military operation, so this next comment might not be correct, but my impression is that they have also had a number of problems with their military operating plants, and it is not obvious that they have any significantly better approach, except that their plants are newer.

Their plants are newer, because they got started a lot later in the business of trying to produce nuclear weapons, and so as a result I think that they were able to take advantage of a lot more knowledge in building those plants.

On the commercial side, there are a lot of lessons that could be learned, but that is more on how we regulate commercial nuclear power as opposed to military.

Senator ROTH. Well thank you very much for your helpful testimony, Dr. Ahearne.

Dr. AHEARNE. You are welcome.

Chairman GLENN. Thank you, Dr. Ahearne, very much.

Our next witness is Dan Reicher, attorney for the Natural Resources Defense Council. Mr. Reicher, thank you for being with us this morning here, and we look forward to your testimony.

TESTIMONY OF DAN W. REICHER, ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL [1]

Mr. REICHER. Thank you, Mr. Chairman.

My name is Dan Reicher. I am an attorney with the Natural Resources Defense Council's Nuclear Project. NRDC is a national environmental organization with over 70,000 members and a staff of 100 lawyers, scientists and resource specialists. We have long been concerned about the environmental effects of DOE's nuclear weapons production complex. Over the past 12 years the NRDC Nuclear Project has won a series of lawsuits to enforce Federal environmental laws at DOE facilities, including Hanford, WA; Oak Ridge, TN; and the Savannah River plant, SC.

I am pleased to testify today before the Committee on Governmental Affairs regarding S. 1085. I commend you, Mr. Chairman, for introducing this important legislation. For too long, the DOE has put production of nuclear weapons ahead of the protection of human health and the environment. S. 1085 would begin to rectify this situation.

In summary, we are in full agreement with the principles of accountability and oversight underlying S. 1085. In particular, we strongly support title III which mandates DOE compliance with RCRA, the Resource Conservation and Recovery Act, as administered by EPA in authorized States for all mixed radioactive and hazardous wastes at DOE's facilities. We do not believe that DOE's recent acknowledgment of its RCRA obligations regarding mixed wastes ensures compliance given the non-binding nature of the rule and the Department's long history of recalcitrance on this issue.

I will confine my remarks to title III except for a brief statement at the conclusion of my testimony regarding title I. I have not considered titles II or IV.

Title III responds to a several year old controversy over the applicability of RCRA to hazardous chemical wastes mixed with radioactive materials at DOE facilities. Over the years DOE has disposed of much of its mixed wastes through direct discharge to unlined pits, ponds and lagoons which have allowed seepage of wastes into the soil column and ground waters.

In 1984 DOE's longstanding claim of complete exemption from RCRA was rejected in a Federal case brought by NRDC and the Legal Environmental Assistance Foundation against the Department for RCRA violations at Oak Ridge, Tennessee. DOE did not appeal the LEAF decision and indicated that it would apply the rule established by the case to all of its AEA facilities. However, following the decision DOE asserted that while non-radioactive hazardous wastes were covered by RCRA, its mixed wastes were not. Although later DOE agreed with EPA that its mixed wastes are subject to RCRA, DOE proposed a rule that would redefine much of this mixed waste as, "byproduct material" under the Atomic Energy Act, which is by definition exempt from RCRA.

The effect of the rule would have been to exclude much of the DOE mixed wastes from RCRA regulation. The proposed rule was heavily criticized by States and environmental organizations. More-

[1] See p. 147 for Mr. Reicher's prepared statement.

over, in the fall of 1986 70 members of the Congress, including the chairman, signed a letter to DOE Secretary Herrington calling for its withdrawal.

On April 23 of this year the Chairman introduced S. 1085. DOE saw the light a week later and issued an "interpretive rule" acknowledging that all of its radioactive wastes which is hazardous under RCRA are subject to regulation under both RCRA and the Atomic Energy Act.

DOE's acknowledgments of its obligations does not change the legacy of the past few years. DOE's recalcitrance regarding mixed wastes has prevented EPA and authorized States from enforcing RCRA fully at the DOE's facilities. As a result, large quantities of mixed wastes containing highly toxic chemicals are not being treated, stored and disposed under the important system established by RCRA.

The critical question today is what effect, if any, should DOE's recent acknowledgment of the applicability of RCRA to all of its mixed wastes have on title III of S. 1085. Our view is that title III remains vitally necessary in order to ensure DOE compliance with RCRA.

First, as a matter of law we do not believe that DOE has the authority to determine the applicability of RCRA to its wastes. DOE has promulgated an "interpretative rule" which purports to determine the applicability of RCRA to the Department's wastes. While we would agree with the result of the rule, it is EPA and not DOE which Congress has authorized to determine administratively whether or not a given waste stream is subject to RCRA, independent of whatever other laws might regulate the waste or component thereof. Moreover, we believe that as merely an interpretative rule the provision may be unenforceable as a matter of law.

DOE's lack of authority and the rule's potential unenforceability leads to my second point, which is that without binding legislation DOE could retract its recent acknowledgment of its RCRA obligations, thereby frustrating EPA and State authority once again. What DOE hath given, DOE can just as easily taketh away. Implementation of RCRA will not be an easy or inexpensive matter at some of DOE's facilities given the massive waste problems that have been created over the past 40 years.

When EPA, States and environmental organizations begin to enforce RCRA fully against DOE, especially the 1984 amendments to the law, the Department may seek once again to avoid its obligations, just as it has done for the past several years. In such a situation, perhaps under a new Administration or DOE Secretary, there will be absolutely nothing to prevent the Department from issuing yet another Federal Register notice purporting to exclude certain wastes or processes from RCRA regulation. This could tie up RCRA enforcement in the same manner it has done since 1984.

States and environmental groups could pursue the issue in court but this is a slow process with uncertain results. I would also note that in its May 1 Federal Register notice DOE clearly states that it believes its previous position under the byproduct rule to be legally justified.

In our view it would be far better to lay the mixed waste issue to rest once and for all by enacting title III. Title III clearly and

simply spells out that all mixed wastes are subject to RCRA as administered by EPA and authorized States. Although title III vests authority in EPA and these States over mixed wastes, it does not remove Atomic Energy Act jurisdiction over these substances.

Under the provision, EPA and authorized States would regulate the non-radioactive hazardous constituents and DOE the radioactive constituents in mixed wastes. Title III then sets in stone the concurrent regulatory authority which DOE has recently acknowledged it is willing to accept. DOE should thus have no objection to title III. If the Department does resist enactment of the provision, this indicates that DOE may not be fully and permanently committed to compliance with RCRA for all of its mixed wastes. I urge the Committee to explore carefully any DOE reluctance toward title III.

Although title III resolves the jurisdictional battle over RCRA's applicability, it does not ensure successful enforcement of the law. There are a number of areas where EPA and State implementation of RCRA could falter. Some of these could be addressed in S. 1085.

First, DOE may attempt to exempt certain disposal and cleanup practices from RCRA, arguing that there is an inconsistency between RCRA and the AEA under RCRA section 1006. In its May 1 announcement, DOE emphasized that it does not anticipate that adoption of today's final rule will, "lead to frequent cases of inconsistency. However, section 1006(a) provides critical assurance that the implementation of the final rule will present no impediment to the maintenance of protection from radiological hazards as well as DOE's accomplishment of its other statutory responsibilities under the AEA."

Buried in this seemingly benign statement may be the seeds of yet another DOE strategy to avoid full compliance with RCRA. DOE may argue that there are irreconcilable conflicts between AEA and RCRA precluding application of RCRA to certain waste streams or facilities. We are very concerned about this potential strategy. In the several years that the mixed waste controversy has raged we have not been apprised of a single example of an irreconcilable conflict between the two laws. There is enough flexibility in RCRA to accommodate the radiation protection goals of the Atomic Energy Act and in the Atomic Energy Act to accommodate the goals of RCRA.

Even more troubling is DOE's reference to its, "other statutory responsibilities under the AEA" as a basis for avoiding RCRA. We are concerned that under tight budget conditions or in other conditions DOE will argue that compliance with RCRA at certain sites or facilities is inconsistent with the Department's responsibilities under the AEA to provide nuclear weapons to the Department of Defense, and therefore RCRA must yield.

I believe that allowing DOE to escape RCRA under this rationale, as the Department attempted to do in the LEAF case, would be a serious mistake. As Senator Glenn stated in introducing S. 1085, we cannot afford to risk permanent harm to our citizens and our land in the name of national security. We urge the Committee to add a provision to title III specifying that DOE will be exempted from RCRA requirements under section 1006(a) only where applica-

tion of RCRA would necessarily increase the radiation hazards of mixed wastes.

Second, as just noted, the high cost of RCRA compliance could thwart enforcement of title III. Waste cleanup costs at Hanford and the Savannah River plant alone could run as high as $25–35 billion based on DOE estimates. Under the current Congressional appropriations process there is not a reliable source of funding which DOE, EPA and the States can count on in developing long-term cleanup plans. I would suggest that the Committee consider legislation creating a more reliable funding mechanism for DOE facility cleanup.

Third, DOE, with the support of the Department of Justice, has asserted that it is not subject to enforceable administrative orders or penalties for RCRA violations issued by EPA or the States. This puts a serious crimp in efforts to enforce RCRA against an often recalcitrant DOE. I suggest the committee consider legislation clarifying Congress' intent under RCRA that DOE is subject to enforceable administrative orders and penalties.

Mr. Chairman, I would now like to turn just for a moment to title I. We strongly support the concept of outside regulation of DOE facilities embodied in title I. We believe, however, that the provision does not go far enough. Any entity created should have a continuing day-to-day oversight function including one, regulations developed after an opportunity for public comment; two, independent onsite inspectors; and three, a formal legal mechanism for States and citizens to participate in the review board's proceedings to see that violations are addressed.

Title I's Nuclear Safety Board lacks these attributes as presently drafted. The Nuclear Regulatory Commission, however, has these functions and we support extending its authority to the DOE facilities.

I would just like to read a quote from a former top engineer at the Savannah River plant in a recent letter regarding title I. He stated: "We remain most concerned that the proposed DOE Nuclear Safety Board appears to be without qualified resident onsite inspectors at reactor sites. We feel that such a board would be as blind as was the ACRS under the old Atomic Energy Commission. If reactor operators are not well trained, if safety systems do not function as intended, if industrial fires could disable the confinement system, who, pray tell, is going to identify and report these problems to the Board? Surely not local management that has condoned the problem for 30 years. Surely not quality assurance groups that report to local management. Such problems may or may not exist, but, pray tell, how will the Board know? And that is the problem: The Board cannot know without qualified independent eyes on the job."

In summary, we are in full agreement with the principles underlying S. 1085. We look forward to working with Senator Glenn and other members of the Committee in moving this important legislation forward.

Thank you very much.

Chairman GLENN. Thank you very much for your testimony, Mr. Reicher. I noted your figure in here of $25 to $30 billion, a DOE estimate to do the waste cleanup at Hanford and Savannah River.

What report was that in? Because we have tried repeatedly to get estimates and we have not really had any estimates. What was the source of that? Do you know?

Mr. REICHER. There are two documents. One is the draft environmental impact statement on the cleanup of the Savannah River Plant that estimates costs between $2 to $12 billion for cleanup of just the hazardous and mixed wastes at that facility. It does not include the high level wastes at the facilities. That is a very recent environmental impact statement draft that came out about 6 weeks ago.

The second document is the draft environmental impact statement on the cleanup of high level transuranic and certain other defense wastes at Hanford, and that estimates costs that are, I believe, as high as $18 billion for the cleanup of those wastes. That report does not consider the low-level mixed and purely hazardous wastes, so I think that our estimate does not completely cover the wastes that have to be cleaned up at those facilities.

Chairman GLENN. Some of these estimates are being made now or are being studied now, I know. We have tried repeatedly to get estimates on them and they have said they are studying these things and will give us estimates at some time in the future. So I was very interested in those figures. But you are just talking about two sites there.

Mr. REICHER. Two sites.

Chairman GLENN. Even if those figures are off by 50 percent, say, it still indicates that we are going to have an enormous bill for cleaning up these things when we take up the problem at 21 or 22 sites around the country.

Mr. REICHER. I would just mention that by comparison the Federal Superfund reauthorization for the cleanup of commercial waste facilities around the United States was about $9 billion. We are talking about two sites with costs, perhaps, at $20 or $30 billion.

Chairman GLENN. The legislation I introduced on April 23 called for joint DOE and EPA jurisdiction over mixed radioactive and hazardous wastes. On May 1, just a week or so later DOE revoked its prior rulemaking and substituted a final rule that seems to go some distance in accepting EPA's ability to regulate the hazardous waste components of mixed wastes.

Does that rulemaking change your view on any of this?

Mr. REICHER. It does not change our view. The rulemaking does acknowledge what we have asserted for a long time and what your bill accomplishes. That is, regulation of mixed wastes under RCRA accompanied by regulation under the Atomic Energy Act, so that I think that DOE has finally come around to acknowledging what your bill would set into place.

Chairman GLENN. You mentioned that what they can put in in regulation they can also take out in regulation. I think that is a good point to be made and while we may be able to sensitize this particular group of people at DOE to the importance of this, we are also concerned that some future administration might find themselves less sensitized and we would find ourselves back in the same situation we are trying to recover from.

Mr. REICHER. I think that is the primary reason for enactment of title III. Given the long history of flip-flopping on this issue, I think it needs to be laid to rest once and for all.

Chairman GLENN. We all know the old story about a committee not accomplishing anything, you know, and a camel is a horse that was built by a committee, and all of those old canards that we have heard for many years, and so, is it good policy to have joint regulatory authority over something as important as mixed wastes?

Mr. REICHER. I think so. Mixed wastes present dual hazards; the radiation hazards and the chemical toxic hazards. I think that for the time being it makes sense to allow DOE to exert its Atomic Energy Act authority over those radioactive constituents, given its knowledge about the hazards presented, and for EPA to exert its authority over the hazardous chemical constituents. I do not think that EPA is at a point now where it has on board the people to do day-to-day regulation of the radioactive constituents of those wastes.

I do think that it is comparable to the system that EPA is working out jointly now with the Nuclear Regulatory Commission over the treatment of commercial mixed wastes. There will be dual regulation of those commercial mixed wastes and we believe that it does make sense to have joint authority with respect to the DOE wastes.

Chairman GLENN. You also said you thought that the NRC should have the oversight, should oversee DOE also in this regard. That would make it sort of a super ACRS and so on, sort of a super inspection agency, I guess. Now, that would be contrary to the split in functions that occurred when the old Atomic Energy Agency was there and was overseeing things and when that went out of business, the functions were split. You would propose, at least in some respects, to recombine them?

Mr. REICHER. I do not think it would be a recombination. When the old AEC was split, it was split to segregate the promotional aspects of nuclear power from the regulatory aspects. I think that that occurred and I think that we would simply be putting into place NRC oversight of not only the nuclear power component, but also the nuclear weapons production component. You would not be recombining the NRC. It would have an independent oversight role.

Chairman GLENN. Fine. Thank you very much, Mr. Reicher. We appreciate your testimony very much.

Mr. REICHER. Thank you, Mr. Chairman.

Chairman GLENN. Our next witness is Mr. J. Winston Porter, Assistant Administrator, Solid Waste and Emergency Response, U.S. Environmental Protection Agency. Mr. Porter, welcome, again, to our Committee. We look forward to your testimony.

If you would introduce the other people at the table with you there, I would appreciate it, for the record.

TESTIMONY OF J. WINSTON PORTER, ASSISTANT ADMINISTRATOR, SOLID WASTE AND EMERGENCY RESPONSE, U.S. ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY LISA FRIEDMAN, ASSOCIATE GENERAL COUNSEL, BRUCE WEDDLE, DIRECTOR OF PERMITS AND STATE PROGRAMS, OFFICE OF SOLID WASTE, AND FLOYD GALPIN, ACTING DIRECTOR OF CRITERIA AND STANDARDS, OFFICE OF RADIATION PROGRAMS

Mr. PORTER. Thank you, Mr. Chairman.

I am pleased to be here. I would like to submit my full testimony for the record,[1] and I will briefly summarize it today.

Chairman GLENN. Your entire testimony will be included in the record.

Mr. PORTER. I have with me today on my left Lisa Friedman, who is the Associate General Counsel; to my immediate right, Bruce Weddle, who is Director of Permits and State Programs in our Office of Solid Waste; and on my far right, Floyd Galpin, who is acting Director of Criteria and Standards in the Office of Radiation Programs.

Chairman GLENN. Fine. We welcome them to the hearing.

Mr. PORTER. Thank you. I will briefly summarize my testimony and then entertain your questions. Let me first briefly indicate the provisions of title III of S. 1085 which you specifically asked me to comment on—that is the mixed waste portion—and describe my interpretation of it as it is constituted now and what EPA is already doing, then I will discuss some of the issues of concern as we see them with respect to the present drafting.

As you know, title III of S. 1085 as it is currently drafted states that a solid waste mixed with a radioactive material is subject to RCRA. Title III makes this point clear and that has been EPA's position. It also indicates that a solid waste which includes source, special nuclear and byproduct material is subject to RCRA requirements when it is in a mixture with a hazardous waste.

It also indicates that wastes are exempt at the time they are emplaced in a repository as defined in the Nuclear Policy Act of 1982. And finally, one thing which is not stated in title III of S. 1085 but is stated in the broader bill is—as we have discussed this morning—the full bill sets up an independent oversight board to review and evaluate DOE's performance in health and safety areas. I want to comment on that briefly.

I am sure you are aware, EPA's position has long been that the hazardous portion of mixed wastes is covered by RCRA. We have had a lengthy dialogue with DOE and others on this issue, as the previous witness indicated, in a new rule on May 1, DOE in effect, concurred with our position and stated that the non-radioactive portion of mixed waste should be regulated by EPA and States under RCRA, and the radioactive portion by DOE under the AEA.

DOE also took a very narrow view which, we were glad to see, concerning the radioactive portion. DOE's rule stated that only the radionuclides in DOE waste streams would be considered byproduct material, not any solvents or other materials mixed with that. I want to also stress that this is consistent with the way we are

[1] See p. 169.

heading, Mr. Chairman, with the NRC. We had a series of hearings, on the House side last year, where we debated whether EPA or NRC would implement RCRA at NRC facilities. The end result came down on the side of joint regulation.

We have a program in place now that we are working on proactively with NRC related to commercial mixed wastes. EPA and the NRC has already published guidance for the States and other interested parties on the definition of mixed wastes; we have issued combined siting guidelines for the disposal of low-level mixed wastes; and we are actually developing, jointly, a conceptual design for proper disposal of mixed radioactive and hazardous wastes. We are fairly far along in our program with the NRC.

We also have a number of things which I am not going to discuss in detail, but certainly EPA is involved with some of the radiation aspects already. Through the Clean Air Act we have promoted various standards for radionuclides in the Clean Air Act. We have limited total release of radiation under the Atomic Energy Act, and we have other documents in preparation now.

I will now take just a minute to discuss some of the issues as we see them with respect to these points. Some of these, Mr. Chairman, are really in the form of questions, because I am not totally sure I understand a couple of the issues in title III of S. 1085.

One of the major issues—and witnesses this morning have seemed to interpret it a couple of ways, too—title III appears to give EPA jurisdiction, or could be construed to give EPA jurisdiction over the radioactive as well as the hazardous portion of mixed waste. That may be an error on our part.

That creates problems for EPA if in fact that is the case. We are concerned about how we are implementing the RCRA program with NRC, where in effect NRC is handling the radioactive part of mixed waste and we are handling the hazardous waste portion.

Chairman GLENN. That is the case and it is what was intended. What is the problem with it then?

Mr. PORTER. OK. There are a couple of problems. You are saying the case is that EPA would have jurisdiction over the radioactive and the——

Chairman GLENN. We will be looking at that and give you more detail on it.

Mr. PORTER. Fine. Anyway, we have a couple of concerns there. I thought it was interesting, by the way, that the previous witness indicated that even he thought that the DOE perhaps should continue for a while with regulation of the radioactive part. We are concerned for several reasons. One reason is that the companion of what we are doing with NRC, and the second is the fact that the Government may end up regulating a radionuclide different ways if it is under RCRA or NRC or someone else.

The other point that I will raise in the form of a question that, I am not totally sure I understand, is whether this bill relates to commercial facilities at all, whether it would disturb the relationship of commercial facilities with NRC? I want to, again, raise that as a question.

Chairman GLENN. No, it would not interfere with that at all.

Mr. PORTER. Fine. There are two other points I want to raise, and they are again somewhat in the form of questions. The exclusion

from RCRA authority of wastes placed in repositories is clear. Perhaps what is less clear is, if RCRA authority applies to the transportation, manifesting and other requirements upstream of the repository? That issue is one we can talk about.

Chairman GLENN. All right.

Mr. PORTER. My final comment, a somewhat broader comment, is that EPA has a degree of concern about the new safety board in the sense of how it relates to EPA. Although it seems to be primarily related to the safety aspect, but it does describe the Board as having fairly broad authorities over both health and safety. EPA, of course, deals with health and environmental authorities, and I am not sure where the overlap may be.

Chairman GLENN. This would not supersede EPA.

Mr. PORTER. OK. Well, those are some questions I had and, as I say, we certainly appreciate your strong interest in this issue. We are prepared to work with you on this.

Chairman GLENN. Good. Thank you very much. Do any of the other people have comments before we go on with this?

[No response.]

Chairman GLENN. You were in the room a little while ago when we were talking about May 1 DOE revoked its prior rule making and substituted a final rule that goes some distance in accepting EPA's ability to regulate hazardous waste components of mixed wastes. What is your interpretation of DOE's May 1 rule making?

Mr. PORTER. Well, I believe it is what EPA wanted. In other words, DOE is recognizing officially that the hazardous waste portion of mixed waste is covered by RCRA and they taking a narrow view that only the radionuclide portion would be considered by-product material. So I think we are in agreement with their regulation.

Chairman GLENN. We just feel that this should not be something that a subsequent administration on down the road someplace, as I said awhile ago, that they should be able to reverse their rule making, which could be the case if we do not lock this in. And so that is what we are trying to do. I presume you would favor that?

Mr. PORTER. Well, I certainly cannot disagree with that. I think however the Congress wants to handle it is fine. We agree in principle with what they have done and we would like to see it continued.

Chairman GLENN. As you interpret our title III of this legislation, would it go further than DOE's final rule, or would it just lock in pretty much what they have already done?

Mr. PORTER. I think with the clarifications we have discussed, it would largely lock in their rulemaking. And I think you have indicated that some of my concerns are not real. I was concerned about some of the provision of title III of S. 1085.

For example, I am concerned if, in fact, EPA is going to regulate the radioactive portion.

Chairman GLENN. Does joint regulatory authority bother you in this case.

Mr. PORTER. No. It was of concern to EPA in the past but we have worked through the issues surrounding joint regulation with NRC. Everything has to do with the alternatives. Compared to all

the alternatives we can think of, joint regulatory authority is not too bad.

Chairman GLENN. OK. Outside of that, Mrs. Lincoln, how did you like the play?

Mr. PORTER. Exactly. Nothing is easy, Senator.

Chairman GLENN. All right. Thank you very much. I appreciate it. We may have additional questions for you later on if we submit them in writing.

Mr. PORTER. Thank you. We are happy to work with you.

Chairman GLENN. Our final witness today, Mr. Joseph Salgado, has been held up and so we will reschedule him for tomorrow's hearing. We will terminate the hearings today rather than delaying any further since we have a caucus in 15 minutes anyway. If his schedule permits we will have him as our first witness tomorrow.

The hearing will stand in recess until 10 a.m. tomorrow.

[Whereupon, at 11:45 a.m., the Committee recessed, to reconvene at the call of the Chair.]

NUCLEAR PROTECTIONS AND SAFETY ACT OF 1987

WEDNESDAY, JUNE 17, 1987

U.S. SENATE,
COMMITTEE ON GOVERNMENTAL AFFAIRS,
Washington, DC.

The Committee met, pursuant to notice, at 10:05 a.m., in room SD-342, Dirksen Senate Office Building, Hon. John Glenn (Chairman of the Committee) presiding.

Present: Senators Glenn and Roth.

OPENING STATEMENT OF CHAIRMAN GLENN

Chairman GLENN. The hearing will be in order.

We continue with the second of our hearings on S. 1085, the Nuclear Protections and Safety Act of 1987. Yesterday's hearing focused on the need for an independent oversight board to assure the safe operation of Department of Energy nuclear facilities, which is addressed in title I, and EPA's authority over DOE's mixed radioactive and hazardous wastes, which is the subject of title III.

We had a rather more complete introductory statement yesterday. This is a follow on to that and any of you who are not familiar with the general purpose of the hearings, I would commend that opening statement yesterday as a summary of what we are about with this whole set of hearings.

Today we will examine title II which applies the provisions of the Occupational Safety and Health Act and the functions of the National Institute for Occupational Safety and Health to employees in DOE nuclear facilities. We will also hear testimony on title IV, which creates a Radiation Study Advisory Board to oversee DOE's research program on the health effects of ionizing radiation.

I have long been concerned about the health and safety of workers in the DOE defense facilities. In 1979 when I was chairman of the Subcommittee on Energy, Nuclear Proliferation, and Federal Services, I held a hearing on DOE's occupational safety and health program as it applied to workers at the Portsmouth Nuclear Enrichment Facility.

At the time of that hearing the GAO conducted an investigation at my request into the adequacy of DOE's procedures for ensuring that its health and safety standards were being met. GAO concluded that DOE was not adequately monitoring and enforcing its health and safety standards for workers at the facilities it examined.

DOE's three-tiered system of checks—inspections, appraisals and complaint investigations—were found to be ineffective in assuring compliance with DOE's own health and safety regulations. Continued concern over this issue, which will be reinforced by testimony presented this morning, was the motivating factor for title II of Senate bill 1085.

Our legislation seeks to correct the situation in which employees in what the GAO has termed one of the most hazardous industries in the world are completely excluded from our Nation's first line of defense against unsafe and unhealthy working conditions, the Occupational Safety and Health Act.

The workplace hazards in DOE defense facilities are diverse. In addition to the risks of working closely with radioactive materials, workers at these DOE facilities are exposed to a wide range of other toxic and hazardous substances, exposure to which in comparable workplaces is carefully regulated by OSHA.

At present, DOE has the statutory authority for the occupational safety and health of contractor employees at Government-owned, contractor-operated facilities. These contractors are required to comply with applicable OSHA standards that DOE has elected to adopt. This is a far cry from requiring DOE to meet all OSHA standards, with inspection by OSHA and enforcement by OSHA. There is no justification whatsoever for continuing DOE exemptions to Federal law regulating health and safety.

Our legislation will also give the National Institute for Occupational Safety and Health access to the DOE defense facilities to do on-the-spot health hazard evaluation. NIOSH's lack of access to these facilities has long been a problem in Ohio and elsewhere.

In addition to requiring independent oversight of worker health and safety at DOE facilities, S. 1085 deals with the problem of reduced credibility of DOE-funded research on the health effects of ionizing radiation. Although DOE is the major supporter of research in this area—about 60 percent of all grant funds are from DOE—there is a strong perception that an agency whose main mission is production of hazardous materials should not be the prime controller of funds for research on the health effects of exposure to those materials.

DOE has had some unfortunate incidents happen in the past suggesting possible attempts to improperly control the nature and dissemination of research results. To avoid such problems and to enhance the degree of public confidence in DOE's research program, S. 1085 provides for the creation of an outside oversight advisory board to examine the DOE program on a continuing basis and to make recommendations on the scope and direction of the program.

[The prepared statement of Senator Glenn follows:]

PREPARED STATEMENT OF CHAIRMAN GLENN

We continue with the second of our hearings on S. 1085, the Nuclear Protections and Safety Act of 1987. Yesterday's hearing focused on the need for an independent oversight board to assure the safe operation of Department of Energy nuclear facilities, which is addressed in Title I, and EPA's authority over DOE's mixed radioactive and hazardous wastes, which is the subject of Title III.

Today we will examine Title II, which applies the provisions of the Occupational Safety and Health Act and the functions of the National Institute for Occupational Safety and Health to employees in DOE nuclear facilities. We will also hear testimo-

ny of Title IV, which creates a Radiation Study Advisory Board to oversee DOE's research program on the health effects of ionizing radiation.

I have long been concerned about the health and safety of workers in the DOE defense facilities. In 1979 when I was Chairman of the Subcommittee on Energy, Nuclear Proliferation and Federal Services, I held a hearing on DOE's occupational safety and health program as it applied to workers at the Portsmouth Nuclear Enrichment facility. At the time of that hearing, the GAO conducted an investigation at my request Government-owned Contractor Operated (GOCO) facilities. These contractors are required to comply with applicable OSHA standards that DOE has elected to adopt. This is a far cry from requiring DOE to meet all OSHA standards—with inspection by OSHA and enforcement by OSHA. There is no justification whatsoever for continuing DOE exemptions to federal laws regulating health and safety.

Our legislation will also give the National Institute for Occupational Safety and Health access to the DOE defense facilities to do on-the-spot health hazard evaluations. NIOSH's lack of access to these facilities has long been a problem in Ohio and elsewhere.

In addition to requiring independent oversight of worker health and safety at DOE facilities, S. 1085 deals with the problem of reduced credibility of DOE—funded research on the health effects of ionizing radiation. Although DOE is the major supporter of research in this area—about 60% of all grant funds are from DOE—there is a strong perception that an agency whose main mission is production of hazardous materials should not be the prime controller of funds for research on the health effects of exposure to those materials. DOE has had some unfortunate incidents happen in the past suggesting possible attempts to improperly control the nature and dissemination of research results. To avoid such problems and to enhance the degree of public confidence into the adequacy of DOE's procedures for ensuring that its health and safety standards were being met. GAO concluded that DOE was not adequately monitoring and enforcing its health and safety standards for workers at the facilities it examined. DOE's three-tiered system of checks—inspections, appraisals, and complaint investigations—were found to be ineffective in assuring compliance with DOE health and safety regulations. Continued concern over this issue, which will be reinforced by testimony presented this morning, was the motivating factor for Title II of S. 1085.

Our legislation seeks to correct the situation in which employees in what the GAO has termed one of the most hazardous industries in the world are completely excluded from our Nation's first line of defense against unsafe and unhealthy working conditions, the Occupational Safety and Health Act.

The workplace hazards in DOE defense facilities are diverse. In addition to the risks of working closely with radioactive materials, workers at these DOE facilities are exposed to a wide range of other toxic and hazardous substances, exposure to which in comparable workplaces is carefully regulated by OSHA.

At present, DOE has the statutory authority for the occupational safety and health of contractor employees at in DOE's research program, S. 1085 provides for the creation of an outside oversight advisory board to examine the DOE program on a continuing basis and to make recommendations on scope and direction of the program.

Chairman GLENN. At this point I want to enter a statement for the record on behalf of Senator Mitchell who could not be here this morning. He said that he might have questions that he would like to submit later and so he may submit those to our witnesses.

[The opening statement of Senator Mitchell follows:]

OPENING STATEMENT OF SENATOR MITCHELL

Good morning, Mr. Chairman. I am pleased to join you and other Committee members to hear testimony regarding legislation you recently introduced, S 1085, the "Nuclear Protection and Safety Act of 1987."

That legislation is directed toward correcting the multitude of health, safety, and environmental problems which now exist at many, if not all, the Department of Energy's nuclear facilities.

This hearing, and the introduction of your legislation, follow closely the series of hearings the Committee held on DOE's compliance with numerous environmental statutes and its own environmental and health standards. Those hearings clearly demonstrated the need for some corrective action.

I regret that I was unable to attend yesterday's hearing on Titles One and Three of the legislation. But I will closely review the testimony presented by the witnesses and their responses to questions that were put by you and the Committee's distinguished Ranking Member, Senator Roth.

During the course of this morning's hearing, we will solicit the views of representatives from a number of employee unions representing workers at DOE facilities and spokesmen from health and safety agencies on Titles II and IV.

I want to commend you, Mr. Chairman, for crafting the legislation we are considering this morning and for scheduling the series of hearings this Committee has held on this significant issue.

Since coming to the United States Senate, you have been a leader in addressing the dangers inherent in the present arrangement by which DOE is responsible for both the management and regulation of these facilities.

I have little doubt that you'll continue to vigorously pursue this issue during the 100th Congress. I look forward to working with you in that endeavor.

Chairman GLENN. We are starting off this morning with Mr. Joseph F. Salgado and the other gentlemen with him this morning that he can introduce to us here.

Mr. Salgado is Under Secretary, U.S. Department of Energy. His testimony was originally scheduled for yesterday. We had a little traffic foul up in him getting here on time yesterday, and so we rescheduled them for this morning.

We understand how those things happen. I did appreciate your note, Mr. Salgado, yesterday afternoon. It was not necessary, but I appreciated it very much, explaining what had happened yesterday. I know these things do happen occasionally, so we are glad that we had a second hearing this morning where we could put you in ahead of the other witnesses.

You will be addressing some of the things that you normally would have addressed as the subject of yesterday's hearing. We look forward to your testimony this morning, either in its entirety or an abridged version. You do have a lengthy statement, I believe. In either event, the entire statement will be included in the Committee record. You might introduce the other people with you for the benefit of the reporter.

We look forward to your statement.

TESTIMONY OF JOSEPH F. SALGADO, UNDER SECRETARY, U.S. DEPARTMENT OF ENERGY, ACCOMPANIED BY TROY E. WADE III, PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR DEFENSE PROGRAMS, DELBERT F. BUNCH, PH.D., ACTING DEPUTY ASSISTANT SECRETARY FOR SAFETY, HEALTH AND QUALITY ASSURANCE, RAY BERUBE, ACTING DIRECTOR, OFFICE OF ENVIRONMENTAL GUIDANCE AND COMPLIANCE, AND J.W. THIESSEN, M.D., ASSOCIATE DIRECTOR, HEALTH AND ENVIRONMENTAL RESEARCH

Mr. SALGADO. Thank you, sir. To my right is Dr. Del Bunch, the Acting Deputy Assistant Secretary for Safety, Health and Quality Assurance within the Department of Energy, to my left, sir, is Mr. Troy Wade, the Principal Deputy Assistant Secretary for Defense Programs; and to my far left, sir, is Mr. Ray Berube, the Acting Director for Environmental Guidance and Compliance within the Department of Energy.

For the record, sir, I would also indicate that yesterday's inconvenience to you, to your staff, to members of this Committee, and

to other witnesses—though unintentional—was inexcusable, and I again offer my apologies.

Chairman GLENN. That is all right. These things happen once in a while. I will not say I have never been late for a hearing myself.

Mr. SALGADO. I would like to make some brief comments, sir, and ask that my formal statement be incorporated and attached to the record.[1]

Chairman GLENN. It will be included in its entirety.

Mr. SALGADO. Thank you, sir.

I would like to very briefly address some of your concerns, the concerns of the public, and the concerns of this Committee concerning DOE, its environment, health and safety apparatus. We would like to at least look a little bit to the past, the present, and to the future and to see what common ground we have with the Congress in moving forward to increase our credibility and the public perception of our awareness to environment, health and safety concerns.

Two years ago, Secretary Herrington came to the Department of Energy. He brought with him a personal belief and a commitment that the Department's mission to meet national security and scientific objectives carries with it a fundamental and primary responsibility to ensure worker and public health and safety.

In May 1985, Secretary Herrington asked me to undertake a study of the environmental, health and safety program that currently existed within the Department of Energy, which has subsequently come to be known as the Kane report. The formal ES&H organization at DOE in May of 1985, sir, was an ES&H function with an office headed by an acting director reporting to an Assistant Secretary who had other responsibilities besides ES&H activities.

In June 1985, I met the acting director of ES&H. He was a gentleman that had been on detail for 1 year to Washington, DC., from the State of Idaho and had desires to go home back to his family in Idaho. At that particular time, the Secretary mandated that we take some corrective actions to ensure that environment, health and safety within the Department received its proper role and had proper responsibilities.

We immediately established an Office of Environment, Safety and Health within the Department and put it under the auspices of an Assistant Secretary, nominated and confirmed by the Senate—Mary Walker, who was confirmed, I believe, in December 1985. Since that time we have moved aggressively within the Department to maintain, to change, and to aggressively pursue environment, safety and health goals.

We have emphasized line management responsibility for safe, environmentally sound operations. We have attempted to establish a baseline of data and information across the entire DOE facility complex both in safety appraisals and environmental surveys at all of our facilities. We have directed that a review of all DOE orders related to safety and environmental compliance be undertaken to ensure that our standards to achieve a level of performance is con-

[1] See p. 175.

sistent with the Secretary's commitment to a strong, environmentally safe program.

We took the unusual step of vesting within that Assistant Secretary for Environment, Safety and Health the authority to shutdown any of our facilities. We have provided field office managers greater weight renewal and termination decisions of our award fee contracts for facility operations and management.

On May 1, we resolved the longstanding issue which is part of your bill dealing with a byproduct rule for mixed waste and EPA and DOE authority over it. We entered into some historic compliance agreements throughout the Nation and are pursuing others where at our facilities we are trying to join EPA Regional offices, the State, and DOE in compliance agreements to move forward aggressively and address jointly the problems that we face at our DOE facilities.

In 1985, the Office of Environment, Safety and Health within the Department had 100 FTE's, or employees, and had a budget of $38 million. Our proposed fiscal year 1988 budget has 165 employees, which is a 65-percent increase. Our fiscal year 1988 budget request is $70 million, which is an 84 percent increase over the fiscal year 1985 budget. As a footnote, I would add that that proposed budget—the President's budget for fiscal year 1988—would have been higher except that our proposed budget—the President's fiscal year 1987 budget—was reduced by 18 percent by Congress, due to Gramm-Rudman and budgetary concerns.

Senator, we have made mistakes in the past and may yet made some in the near future. We have a whole system of problems that we are trying to address over an extended period of time. But we do remain committed to move forward within the ES&H program. We remain committed to attempt to basically bring our system, our complex, into compliance with existing requirements.

The reality of today is that we have an aging complex. We have an enormous legacy of the past, and regretfully, we have had misuse and abuse of the environment in the past by DOE. But probably most troubling, sir, is the fact that DOE's credibility and its public confidence has been eroded because of both this legacy, the aging complex, and our own misuse and abuse of the environment that surrounds us.

That is of great concern to us, as it is concern to you. Your bill, sir, states in section 102:

> The Congress finds that there is a great need for vigorous investigation of events at nuclear facilities controlled by the Department of Energy and continual review and assessment by expert outside authorities would be of assistance in identifying actual and potential safety problems and needed standards at these facilities.

We agree with that, sir. You go further to state the need for an oversight board to give independent assessment of the safety and health of our activities. You refer to it, I believe, sir, as the Nuclear Safety Board. You describe its purpose as one, to annually review and evaluate implementation of health and safety standards, as well as applicable Department of Energy Orders, at each nuclear facility. The Department of Energy agrees with you.

Two, it is purposed with conducting independent investigations of events at the Department of Energy nuclear facilities. The Department agrees with you.

Three, its purpose is reviewing and assessing the content and application of all orders governing the Department of Energy nuclear facilities. The Department of Energy agrees with you.

Four, it is purposed with recommending to the Department of Energy improvement in its nuclear facilities operations, health and safety standards. The Department of Energy agrees with you.

Five, the purpose of the Board was informing the Congress of its findings and recommendations, and the Department of Energy, again, agrees with you.

How we reach those purposes and fulfill those commitments and those goals we may differ in our approach, but we are in agreement with the fundamental philosophy of your bill—the fundamental approach of your bill, its findings, and its purpose—and look forward to working with you to solve and reestablish the credibility of our Department.

I think it is important that there are certain attributes that we need to work through. We have to look at the independence of the board, its accountability, safety assurances, and other things, and particularly, the aspect of practicality, that whatever board or forum is brought forth and proposed in legislation and, if it is adopted, that it is operationally functional; that it carries out its purpose; and that it does not inhibit the Department from carrying out its own mission and goals, and objectives.

There is no oversight mechanism, we believe, that can relieve DOE of its responsibility to ensure acceptable safety performance or sound environmental practices. The Department believes that we must continue to move forward for a strong management commitment to safety and environment. We must look for increased funding for capital improvements. We must establish clear standards of performance, and we must better train our workers.

To arrive at these goals, we believe that safety and environment and health is a multidimensional, multifaceted approach. First, outside independent oversight is necessary; Second, that there be a strong internal ES&H program within the Department; and Third; that there be mechanisms be put in place so that there is self-improvement at the contractor level.

Within the next few weeks we will be bringing in our field operations managers for an analysis of your legislation, other pending legislation, and to help work toward what we believe is an important step forward in the history of the Department of Energy: one, the establishment of a functional, workable oversight; and, two more importantly, the overall goal and objective of the reestablishment of a strong credibility for the Department and public confidence in the operation of our facilities.

I thank you for your time, Senator, and would welcome any questions.

Chairman GLENN. Thank you very much, Mr. Salgado.

In your prepared statement you state that DOE's environmental safety and health, the ES&H program, must be treated as a first priority by all DOE personnel. Is that something new? Is that a new policy? Where is that stated?

Mr. SALGADO. Sir, upon Secretary Herrington's arrival he put out, within the first 120 days of his arrival an environmental policy statement raising environment policy and health to a primary re-

sponsibility that flowed not only from headquarters, but was predominant in the field.

Whether or not, in past administrations, environment, health and safety has had that priority, I could not comment and am unaware of. I would indicate to you that we are basically continuing to move forward with maintaining a high profile for the office of Environment Safety and Health and that their oversight function has increased dramatically in our tenure here at the Department.

Chairman GLENN. Just a slight amount of history on this. I think this is coming to a head on your watch, in effect. It is something that has not just occurred in the last few years. It is something that has been decades, nearly two generations almost, building up and we all realize that. Many of the things we are now measuring or learning how to monitor, we maybe did not have good monitoring on back in the early days of the program, and some of these plants are 35 or more years old.

But now we do know that is going on and whether it happened in previous administrations or whatever, it is time we got going in cleaning this thing up. I think in the past it is fair to say that production has had the priority over safety concerns. We have had in the civilian sector, over in the electrical generating plants that are nuclear powered, we have had an emphasis on safety far more strict with regard to the workers and the people in communities surrounding those plants we have had far more emphasis on safety in those areas than we have had in the DOE-run plants.

Early on we said there were security problems, and so we put them sort of behind a veil, if you will, and did not really examine them that much. And now we know that some of the things that went on were not necessary and we have to correct all of those things and it is going to be expensive to do that.

Yesterday we had some testimony that indicated to clean up these plants there was one estimate by one study, in the testimony yesterday, that said just to clean up Savannah River and Hanford, someone made an estimate that it would cost $25 to $30 billion just to clean up those two plants.

We have asked repeatedly for estimates on what the total clean up cost of our nuclear problem at DOE would be, how many of the plants have to be really replaced to be safe, how much equipment has to be replaced, soil contamination, aquifer level contamination. We have asked repeatedly for this, and I know it is difficult to get those figures.

We have been told repeatedly the studies are underway.

Do you have any figure you can give us today? Number one, I guess I would ask, is that figure with regard to Savannah River and Hanford an estimate that you would subscribe to? And what is the total clean up bill going to be to put DOE in compliance with EPA and make facilities as nearly as possible as safe as our other nuclear facilities that are in the electrical generating field.

Mr. SALGADO. Senator, I do not believe that there is sufficient data to give an indication of what it would cost for the entire complex to be cleaned up or to bring it into compliance. Mr. Berube, I believe, has some information on current studies that are underway and whether or not the amounts that you have quoted are accurate or not.

Chairman GLENN. Can you give us some ball park figure, Mr. Berube? Do we have any ball park figure? I know we have talked for almost the past year about studies underway. What can we look forward to? Can you give us a time certain that we can start trying to put some muscle behind this and some funding behind it, because we have to do it? It is not something that we can put off indefinitely.

Mr. BERUBE. We agree that it has to be done, Mr. Chairman. I wish we could say that you would have it a year from now, but we cannot. And the reason is, what you are talking about now is DOE-wide; all of our environmental problems, all of the safety problems. We simply do not have that information.

On the environmental side, most of the costs deal with inactive waste sites where we have to go in and characterize the nature and extent of the problem before we can even figure out the solution, and then come up with the cost estimate.

Now, we do have some cost estimates at selected facilities; Savannah River, for example, where there has been further progress on characterizing the problem. We also have that at the Lawrence Livermore National Laboratory and a few other facilities.

Chairman GLENN. Do we have those ready to go then? You say we have some estimates on cost figures for Savannah River?

Mr. BERUBE. They are rough estimates.

Chairman GLENN. What is our rough estimate, then, on Savannah River?

Mr. BERUBE. In the inactive hazardous waste area—I think EPA has had this same experience—an estimate today is out of date in 6 months to a year.

Chairman GLENN. Well, what is the out-of-date estimate, then?

Mr. BERUBE. The Savannah River estimate—and it was a range—I believe it is $2 to $12 billion, depending on several different alternatives that could be employed.

Chairman GLENN. How about the one at Lawrence Livermore, then? What is the estimate on that?

Mr. BERUBE. I do not have the details on Lawrence Livermore. Again, it is a rough order of magnitude estimates. For those facilities where we do have estimates, we would be pleased to provide those for the record.

[The information referred to follows:]

PRELIMINARY COST ESTIMATES FOR INACTIVE WASTE ENVIRONMENTAL CLEAN UP

DOE Facility	Preliminary estimates
Lawrence Livermore National Laboratory (California)	$106 to $170 million.
Savannah River Plant (South Carolina)	$2 to $12 billion.
Oak Ridge National Laboratory (Tennessee)	$1 to $1.5 billion.

Mr. BERUBE. The Hanford estimate is a little different in that the information that the witness yesterday quoted comes from our Draft Environmental Impact Statement dealing with disposal of high-level and transuranic waste. As opposed to the inactive waste area, we do know the quantities of high-level waste that we have at

Hanford. We have, however, enough information on alternative disposal methods to develop cost estimates.

Those cost estimates at Hanford, again, are rough order-of-magnitude estimates, but they do not include estimates for cleaning up inactive wastes at Hanford.

Chairman GLENN. See, what I would like to do is get going on this.

Mr. BERUBE. We agree. We would like to do it too.

Chairman GLENN. I do not think we need to wait for a final glorious study that is going to say, OK it cost $50 billion, or whatever it is—and that may be cheap. I do not know. But I just do not want to wait any longer. We know there are problems.

Let me ask a couple of questions. You have a preliminary environmental survey of the Mound facility in Ohio. That was just released, and it raises some very serious questions, and these are things that we can address and we can start getting budgeting and funding behind this to do something about it.

Tritium at 5 times the level allowed by the Safe Drinking Water Act has been found in an unmarked spring on public property, the Mound facility. They have to dilute tritium in the ground water that is reaching the public drinking water supply in order to keep within drinking water standards. Mound has 193 hazardous waste and waste oil drums which have been sitting out in the field since 1985.

They have not notified the State that it is operating a hazardous waste storage facility without a permit. What does the report say about the cost of clean up, given that Mound was considered to be among the best of the DOE facilities? We know that there are problems, we can estimate what it is going to cost and get going. Even if it is piecemeal, let's get started.

Mr. BERUBE. Right. That is exactly what the Environmental Survey was intended to do—identify the full universe of environmental problems that we have and develop enough information for us to establish priorities, compare the problems one against another, and develop a long-range plan for correcting these problems.

But it does take time. That is not to say that there is no work ongoing now—there is, at Savannah River, at Oak Ridge, Lawrence Livermore, and at Rocky Flats.

Chairman GLENN. To come back to Mound again, they have reports of stack emissions of plutonium 238 and tritium that are questionable and possibly understated. One-third of the air monitoring stations that DOE surveyed did not meet accepted siting criteria. The air flow rates at the onsite monitoring station have only been calibrated once since 1977, and the 15 that are offsite have not been calibrated in a decade.

What do you have to say about this?

Mr. BERUBE. Unacceptable.

Chairman GLENN. Well, what are we doing about it? I agree with the unacceptability. What are we doing?

Mr. BERUBE. Now, with the Survey, having completed the first stage, we will—from the compliance end—follow up on compliance-related findings. We will also ask the Operations Office that administers Mound—DOE's Albuquerque Operations Office—-to develop

an action plan for correcting all of those problems. And we will be doing that in cooperation with the States and with EPA.

Mr. SALGADO. Senator, if I might add that I would like to pursue the Mound issue that you have raised and, within a week, I will have a letter back to you indicating what our process is and what the program is planning to do about it, sir.[1]

Chairman GLENN. Good. I hope you can do that, and I hope you can include some cost estimates of what just the first little nibble at trying to straighten this thing out is going to be. We tend to deal in great giant projects here, but these are things we can start working on, even if they are not the giant billion dollar clean up. Let's get started, and I can assure you that I will work every bit that I can here to get you the funding for doing that job.

We have another one there that Mound's quality control supervisor does not follow accepted quality assurance procedures for his labs, that Mound does not have consistent day-to-day verification that its data are of acceptable quality. And this is a DOE preliminary study. This is your own study. And I compliment you for doing it. And that has been released.

But I am concerned, and not just about Mound and Portsmouth and Fernald that we have in Ohio, but our last GAO study was nationwide, all the DOE facilities. We branched it out to that. And I am concerned that we start doing the things that we know have to be done without waiting for the giant study that is going to be like a Sears Roebuck catalog thick on what has to be done and is going to have a price tag to match, too. So I just want to get going on the things that we can do and do them as fast as we possibly can.

You said you would send a letter back to us on that particular facility there at Mound since it has been the subject of a preliminary investigation.

Mr. SALGADO. Yes, sir.

Chairman GLENN. Do you think it will be possible to put some dollar figures on to that?

Mr. SALGADO. I will have to review the study that has been done. If at all possible, we will attempt to do it sir.

Chairman GLENN. Well, I would hope that you could do that, because I think over the last couple of years we have become so much more concerned about this, and yet we are still doing studies, we are still looking at it, we are doing preliminary this and something else that, and we have been doing this clear back into the last administration, as a matter of fact, the previous administration, in which we were looking at studies and trying to get a handle on something or other, and it seems to me there are enough specifics now.

I give that example because it is Mound that I get questions on back home. I use that just as an example, but the same thing applies to every other facility in this country. We have put off our clean up too long, and I think it is time we get started. It is not going to be easy in the budget situation in which we find ourselves.

What effort has the Department taken in terms of assessing the comparability of the DOE orders, comparing them with licensed

[1] See p. 260 for a copy of the Mound Action Plan.

commercial facility standards? Do you have a comparability of that, of the safety standards at your plants compared to the licensed commercial facilities?

Mr. SALGADO. I would ask Dr. Bunch to respond in detail. I do not believe that we have "comparability" as to specific standards, merely because, of course, there is a tendency here for an apple and oranges comparison due to the type of production, research, and test reactors that we are running across the board, and I would ask Dr. Bunch to respond.

Dr. BUNCH. I think, with regard to any new facility, we will be fully comparable. We recently issued a very detailed set of guidance for our non-reactor nuclear facilities that incorporated virtually every nuclear regulatory guide or regulation that would apply to such facilities and added a few that we thought were appropriate to our unique operation.

In the reactor areas, we have, basically, a rather diverse set of reactors, both in terms of type and in terms of age. Where we have had Advisory Committee on Reactor Safeguard reviews or Nuclear Regulatory Commission reviews, there have been specific attempts to judge comparability. So, we have a fair idea of the shortfalls where there are shortfalls, and there is not a single answer. In some cases, we know that there are good reasons for differences; in some cases it has to do with the age of the facility; and, in some cases there just have not been the kind of upgrades that we would like to see in the future.

Chairman GLENN. You put out, on May 1, the final rule, and that is a laudable step. Now that we have a final rule, is there any objection the Department has to codifying that in our title III, making it so it cannot be just unruled later on by a subsequent administration someday? We would like to lock it in with law so that we support your final rule. That is good.

Mr. SALGADO. I think, Senator, that there is no objection, in general, to title III if, in fact, Congress cares to codify that. The only issue that does come up, I believe, for further discussion would be the issue of the inconsistency clause. Ray is much more of an expert in that. But that is probably the only issue that we would want to discuss with you or your staff at a later date.

Chairman GLENN. Fine. Who has comments on that?

Mr. BERUBE. As discussed with Committee staff, there was a little uncertainty regarding language in title III, as currently drafted, as to whether or not it was intended to provide for joint or concurrent RCRA/AEA regulation, or simply regulation under RCRA. Now, if it is clarified to provide for joint regulation, then we do not have any problem with that—it is the same thing we have done with the May 1 rule.

Chairman GLENN. Has staff talked about that? OK. That is under consideration. Good point.

When you do an RFP, request for proposal, on your research on health issues, do you put that out for bid or do you do sole source on that? How do you do that?

Mr. SALGADO. I would ask Dr. Thiessen in the back, who is the Associate Director for our Health and Environmental Research.

Chairman GLENN. Fine. Come on up to the table up here. That is fine.

Dr. THIESSEN. Mr. Chairman, we do not work with RFPs. Once a year we publish a solicitation for grant applications, and then in special cases, for example, such as in the radon area, we publish program solicitations for grant applications. That is how it works. All applications, basically, for grant support by the Department of Energy are competitive and compared with each other, not through the RFP route.

But in effect it is the same system.

Chairman GLENN. OK. I do not know that that has been a problem. It was one of the things I had wondered about though, is how you do that. Has that caused you any problem? Should they be put out for competitive bid?

Dr. THEISSEN. No, sir. The only problem is that sometimes we get too many proposals, that is all. But no, there is no problem in getting a response, or even in comparing the quality.

Chairman GLENN. The reason I ask about it in particular is because we are going to be talking big money on some of these things by the time we find out what the whole problem is and define it enough that we really can get a handle on it and start people really working on it. I am not sure in some of these research areas we even know how to clean up some of the things.

How do you clean up an aquifer level other than flooding it? And if you cannot do that, I do not know what we do. Down there around Fernald some of the wells down there, that you are well aware of, have been closed up and I do not know how we clean up something like that. If there is going to be some research, these are going to be big time research projects to try and figure some of those things out. That is the reason why I am concerned about getting our research procedures very well lined up before we get into some of these more definitive big time research projects.

One more before I turn this over to my colleague here, Senator Roth. This came to light yesterday, a report that was prepared in the late 1970's concerning the Plutonium Finishing Plant at Hanford. The report said the plant might collapse during an earthquake resulting in the spread of deadly plutonium to surrounding areas. That report resulted in shutting down that PFP, but in 1983 the facility was started up again, and it operated until the fall of 1986 when a criticality violation at the Purex plant resulted in shutdown again.

My understanding is that there has been a continuing discussion at DOE about restarting the facility which processes materials produced by the N-reactor. I understand a decision may have been made day before yesterday—that you may have made—to extend current safety studies at the PFP until August when a decision is to be made on the future of the plant. In the meantime, DOE is proposing to restart the plant for the purpose of processing existing scrap materials at the site.

What steps have been taken that should give us confidence that the PFP can be operated safely to process the scrap materials? If there was any seismic event during such processing, what might happen there? What is the status of that?

Mr. SALGADO. Well, Senator, let me give you an overview because I was intimately involved in this decision. It was a decision that was made on Monday afternoon after a whole series of various con-

siderations. I think, first and foremost, the PFP building itself is not, in total, subject to seismic criticism. There is one portion of it that is questionable as to its seismic capability, and that is referred to as the RMC Line or the RMC Area.

There is another component, which is the vault, that meets, I believe, modern standard seismic criteria, and there is another component of the PRF line that also meets seismic quality standards. The problem that occurred is that this was an older facility, and what happened is, in their haste or waste, they decided to add on to this facility at both ends. What we now have is seismic quality capabilities at each end, and in the middle, we have a problem.

The issue of starting up the PFP Line arose last week in the field and was brought to Headquarters on Monday. The issue is a safety issue, Senator. It is not a materials issue. The issue is a safety issue.

The area to be started up is referred to as the PRF Area—not the area where there is this question of seismic capability to withstand earthquakes. But, in all candor, approximately 10 percent of the questionable area has to be utilized so that the other component can move forward.

The driving force for commencing this activity or this campaign at the PFP facility was a recommendation by the contractor, by the field office, and by Headquarters program officials when the environmental safety and health people said there was a safety issue. This issue is that the quantity and quality of the materials that are currently within the confines of the PRF area and left there in status quo pending further determination, due to their nature and component created a health factor or health hazard to the workers and to the facility itself.

I would ask Mr. Bunch to explain a little bit more in detail why this occurred. But the campaign to remove the material that already exists there is not a campaign for materials to come out the other end, but it is a campaign to remove it. I am told and our people firmly believe that it is a safety issue. It is not a materials production issue.

Del?

Chairman GLENN. Go ahead.

Dr. BUNCH. Mr. Chairman, we issued some new safety orders in September 1986 that strengthened our safety analysis requirements. The plant was brought down on October 8, 1986, because of concerns about repeated instances of violation of procedure; something that I do not think any of us want to see happen.

The first thing that we need to do, to satisfy your question, is assure that whatever caused that problem no longer exists. There has been a whole host of activities over the last 6 months to make sure that the operators were better trained, that management was truly committed to enforcing procedures, enforcing criticality safety requirements. It had reached a point in which they said, that problem is behind us, we have got a much cleaner, better focused operation there than we had before.

At that point we turned to the question of, is there a frailty in that facility that poses a health and safety risk, and can that be overcome before we reach the decision to restart? The Under Secretary has described the basic problems. What has happened is that

we did a glove box by glove box survey of just exactly what was there and the contractor was directed to reduce the hazards wherever possible.

We were left with a situation, as was just described, where the plant operating procedures were in a state of readiness. The hazards had been reduced and we were sitting there with somewhat less than 200 kilograms of material which the contractor said posed a danger if left as is. I am not talking about a great danger, but his recommendation was that, from a safety standpoint, we would be better to dispose of that material and get it into a safe storage condition than to leave it as is while we resolved questions about the facility's seismic capabilities.

We looked at the use of the facility. Most of the operations, as was just described, are in areas in which even if there were a seismic event, we would not expect to see structural damage that would cause a large release. The areas in which there is some risk contain very small amounts and we believe that administrative controls and other procedures will assure that there is no risk, either to the workers or to the public.

So what we are faced with is a situation of how to make that plant safer. That was the only question before us, and what we have tried to do is get into a mode where we are going to actually make the process safer to all of us.

Chairman GLENN. OK. My time is up. I will have a followup later on.

Senator Roth?

Senator ROTH. Thank you, Mr. Chairman.

Gentleman, yesterday we had two witnesses—Mr. Ahearne from Resources for the Future, and Dan Reicher from the Natural Resource Defense Council—both of whom suggested that the NRC could serve as the independent oversight agency envisioned by this legislation. Now, as I mentioned yesterday, I am a believer that there has to be some kind of independent oversight. I think there is a need. But I am also concerned about creating new boards, new commissions, because that is what has created the bureaucracy mess we have in Washington.

I wonder what you think about the idea of whether the NRC could serve as the independent oversight agency, particularly in view of the criteria that are outlined in the proposed legislation?

Mr. SALGADO. Senator, I would offer some general comments. First, we in the Department agree with you and agree with the Chairman that independent oversight is a necessity for building public confidence and credibility in DOE programs. Our objectives and our philosophy are the same. How we approach that and obtain that, we may differ.

Second, I firmly believe that the NRC, because of the non-comparability of the current existing facilities and the age of our facilities, would not provide the best oversight board. I think there is an initial problem when you would have two sets of standards, both for the defense program side of it and the commercial side.

I think essentially that that is not a healthy situation to have two parallel or two different standards for a nuclear industry. So I see some problems that could exist in that arena. I think that because of the uniqueness of our facilities—we are dealing with

heavy water or graphite-moderated reactors—I think we have some technical and substantial differences to address.

Del, who had some experience at the NRC prior to coming to DOE may have some additional comment.

Dr. BUNCH. We have used the staff of the NRC and the Advisory Committee on Reactor Safeguards to help us in special reviews. Where they have some special expertise, we certainly can use them. As long as we have a strong internal ES&H function already present and the ability to reach in, through our memorandum of agreement with the Nuclear Regulatory Commission, I think we have got the best of both worlds.

Mr. SALGADO. I would make one other comment, if I could, Senator. I am sure you are aware that the Department, because of its aging facilities, is looking to the out-years to the building of new facilities, particularly what is referred to as a New Production Reactor. I questioned my internal staff the other day. I said, given the age of our facilities and their individual differences is there the possibility in the out-years as we develop new facilities that we could merge the design requirements for these new facilities with those that the NRC applies?

I was advised that, basically, that to develop the requirements, the regulatory apparatus at the NRC for "licensing" a "new facility" for DOE would take in the area of 5 to 7 years, merely because, again, that they have not developed the regulatory apparatus to deal with heavy water reactors or graphite moderator reactors. They deal with the light water reactors.

So we have given it some thought. We think there are some impediments. We do utilize NRC. We use the ACRS activities. Somewhere in between there is some middle ground to tap this expertise and knowledge and develop an independent oversight board. I am not sure what the proposal is yet, sir, but we plan to have some strong dialogue with you on the Hill.

Senator ROTH. Well, yesterday we had testimony as to the kind of resources, including personnel, that would be required to fulfill the independent oversight. One witness testified that it would take several hundred individuals to administer this kind of program.

What do you see as a need? What kind of resources? What kind of personnel requirement?

Mr. SALGADO. I would just speculate for you, Senator and Mr. Chairman. I would speculate that as we develop this that we need an independent oversight body. I do not know whether or not we need to reinvent the wheel both as to the amount of staff and technical people.

In reality, I think there is a limited world of technical expertise that deals not only in the nuclear industries any more, but also that deal basically in the defense production complexes itself with the graphite, the heavy water, the plutonium and the tritium demands. So we have a limited world out there that we are going to have to utilized, probably, across the board until we train new people coming up into the system.

I guess what I would like to be able to see—and it is pure speculation on our part as we work through this with you—is to see an independent oversight board that has the capability of tapping both the internal mechanisms within the Department, because I think it

is important that basically the Department itself—safety is a philosophy, it is something that must permeate and it must be institutionalized within the Department itself—it cannot be mandated externally. You have to have it ingrained within your corporate structure.

I would like to see some type of board that would be able to tap the additional resources but yet maintain its independence and have the ability on need-call basis to bring in a series of experts, such as we did with the National Academy of Science, when grave concerns of monumental importance arise, or bring in the ACRS, the NRC or any other capabilities they have.

Needless to say, by establishing layer upon layer of bureaucracy, I am not sure that eventually we are merely going to be bogged down in additional processes—I am not sure that we will be addressing the safety issues that I know the bill and the Senator and you are trying to address.

Senator ROTH. Mr. Ahearne, I believe it was, testified yesterday that he felt that much of the personnel within NRC could be utilized in this effort. In a sense you are at least partially agreeing, that you say that wherever it is, they could call upon it.

Mr. SALGADO. I think they need to call upon it. But as you are well aware, Senator, the NRC is overtaxed and over worked with their current mission and their current goals and their current regulatory aspects as they move forward in their particular areas in the commercial side.

I think, essentially, that there are components there that can be utilized and utilized effectively. I think the ACRS is another component that we have used in the past. We have used them on the start up of our fast-flux reactors and I think those are areas, basically, that they are compatible and can be utilized.

How it is basically structured and the drain of manpower so that we do not jeopardize other components of the nuclear industry is something that has to be balanced.

Senator ROTH. If the bill continued with its current provisions in Title I would you see the need for a third party arbiter to resolve disputes between DOE and the board?

Mr. SALGADO. The definitive answer is yes.

Senator ROTH. How would you propose doing that?

Mr. SALGADO. Well, the regulatory aspect of Title I we have strong disagreement with. I think that the Executive Branch in running operations must be held accountable to the decisions that are made, but likewise must have the responsibility, authority, and flexibility to arrive at these decisions. And so we find the regulatory aspect of Title I, which leaves no flexibility to future Energy Secretaries to be objectionable.

How would we develop a third party arbitrator and where do you find the truth and justice in it? I am not quite sure how we would develop that. But once again, I think it develops into a major problem of additional hearings, additional experts and additional witnesses. We find that basically the regulatory aspects of Title I are something that we would oppose and we would hope we would be able to work and develop a better system, a more functional system, sir.

Senator ROTH. Are you suggesting that if you maintain the present provisions you can hold nobody accountable because neither the Department itself nor the board has full authority?

Mr. SALGADO. No, I am not. I guess what I am saying is that the accountability is an issue. It is easy to be able to duck the issue and say, well, the board has said you have to do this and so we cannot do that.

I guess what I am saying is that in order for any operation to function and move smoothly and go through, there are decision processes that have to be made and responsibilities that have to be taken and there has to be a weighing of certain aspects.

I guess the point that I am trying to make is that I do not believe that we can absolve the executive branch from assuming the responsibility or abrogate their authority to make these decisions. I think we have to be held accountable in the Executive Branch for our failings. I sincerely believe that. And I think that the Congress has a right to hold us accountable in hearings such as this for our failings, our misuse and abuse.

But I do find it a problem that Title I in itself takes away from the Secretary, I think, the authority to make certain decisions, and also absolves him of some of the responsibility of making some hard decisions that may have to be made in the interim period of time until this complex—it can be brought into some type of compliance with current standards and current safety and health aspects.

Senator ROTH. I go back to my question, because as I listen to you, it seems to me what you are saying is that if the board can dictate certain safety decisions to the Department of Energy then, in fact, no one is going to assume responsibility or accountability because you have got two different groups making the key decision.

Mr. SALGADO. That is the problem that I see, sir, in title I.

Senator ROTH. But that is divided responsibility. Maybe it is desirable. I do not know. I am not passing judgment, but I think what you are creating is a divided responsibility and the problem, I suppose, is that there will be some genuine differences on safety, particularly in this technology; is not that true?

Mr. SALGADO. Sir, an example, I believe is that we brought an outside group of experts to the N-reactor. We brought the Roddis group which were six individuals that came forward, highly skilled individuals, well renowned in their fields. There were 157 recommendations that came forward, but they were not uniform.

If you look at it, basically you had disagreement over where the priorities were. Two people felt that hydrogen mitigation on the N-reactor was of crucial importance. The other four did not feel it as such.

The National Academy of Sciences is now looking at the N-reactor and I am led to believe that they may not see hydrogen mitigation as a major issue, either. It is an area where reasonable men can always differ. And as they differ, there are certain operational things and decisions that have to be made. I share the concern that you have mentioned and it is something that we need to work out and look at to see how we can best overcome it to make whatever oversight board, that it is functional and can operate with the au-

thority and responsibility it needs and not impinge upon what I really believe is the responsibility of the executive branch also.

Senator ROTH. Well, what concerns me is that if you have a catastrophe as we had at NASA, who are you going to hold accountable? I can see an event of that kind of disaster with both sides blaming the other. You can just predict that as happening without question.

I have a final question, Mr. Chairman, and I realize my time is running out. This committee has received a lot of testimony highlighting the safety and environmental hazards at DOE facilities.

Do you have a ball park estimate of the amount of money it will take to correct these problems? And in addition, how would you recommend that we prioritize those hazards?

Mr. SALGADO. I would indicate to you sir that I do not have a ball park. All I can indicate to you is that it is my impression across the board that it is in the billions upon billions upon billions of dollars with a lot of time and effort that needs to be put into it.

We have attempted—Secretary Herrington did indicate when he first came on board 2 years ago that we need a database across the board for our environmental problems within the Department of Energy. We have started to conduct environmental surveys. They take time and they are not, probably, as expeditious as possible. We are midway through it. About 16 of our environmental surveys are done and we have approximately 20 more to complete.

So that, essentially, we are attempting to develop a database line upon which we can identify the world of environmental problems. Then we can, hopefully, through a systematic approach, start to address and prioritize those problems that are the greatest need and have to be addressed in the short term, the midterm and the long term.

Senator, in all candor, I see this as a problem that this country, the Congress and the Executive Branch have to address and it will take us well into the next century before—if given the will, given the money and given the time—that it will take us into the next century to fully complete.

Senator ROTH. Well, I would just conclude that I think time is of the essence in collecting this data and making those decisions.

Mr. SALGADO. We agree, sir.

Senator ROTH. Thank you, Mr. Chairman.

Chairman GLENN. Thank you, Senator Roth.

With regard to the NRC versus the independent nuclear oversight board, cannot the oversight board use the staff of ES&H to do some of the staff work? I am concerned that people are starting to talk about hundreds and hundreds of additional staff people necessary and that was never envisioned. What the bill envisioned was that the board would be able to direct the staff to carry out some of the tasks assigned by the board and not create a new bureaucratic monster over there someplace.

Mr. SALGADO. Sir, we would agree wholeheartedly with you. We think it would be important that whatever outside mechanism is set up, that that mechanism utilizes and maintains the institutional integrity of the ES&H function within the organization. To fail to do that, you might as well remove the ES&H organization from internally in the Department and, basically, we will be really on a

reactive mode. And that is unacceptable, I think, at least to Secretary Herrington and myself.

So we would encourage that the ES&H function which we have attempted to build into a strong independent organization be utilized by whatever outside mechanism is established.

Chairman GLENN. Well, that is what we envision, and I would want the legislative history to show exactly that. We are not trying to set up something that is a whole new DOE above a DOE or something.

Senator ROTH. Would the Chairman yield? I am not disagreeing with that, but we did have testimony yesterday by one of our witnesses—I think it was Mr. Ahearne—who testified, that is where the figure of hundreds came out. The reason I raise it is that I share that concern, because I do not think either one of us want to create a huge new bureaucracy. Yet, if you have independence, how are you going to secure that?

Chairman GLENN. One followup on my comments on Hanford and the plutonium finishing plant out there. GAO was out there looking into all the health and safety issues out there. Why were they not informed of that problem at the siting and whether PFP should be fired up again or not and so on? They did not know anything about that. They were not apprised of that. We have got to have a free flow of information working together if we are going to make this whole thing work.

Mr. SALGADO. Senator, I agree with you. There are two things. First of all, I do not know when GAO was out there. I can only indicate to you that this request, based upon a safety analysis, came forward late last week and was on my desk on Monday. I would ask, maybe Del is aware of what transpired and what the timeframe was. I do not know when they were there. The facility had been down for a period of time for those safety improvements.

Del?

Dr. BUNCH. We will have to get some specifics to you, but I must say that my understanding is that GAO went out for reasons other than to look at that facility. The seismic issue has——

Chairman GLENN. Well, now wait. They were looking into health and safety matters of the whole facility as I understand it. That was their mission there and that is the reason I was surprised this was not brought to their attention. They did not know anything about this after they came back from all their investigation out there.

Dr. BUNCH. I think as the Under Secretary was indicating, we need to find some mechanisms to make sure that important issues are brought to everybody's attention in a timely fashion. The seismic issue has been in the Washington press every since it surfaced in December of last year. I will have to provide some specifics to you, sir.

Chairman GLENN. We will wind this down. Some of the things I have brought out this morning here with regard to Mound—I hate to keep coming back to that but I will—some of those things are just procedural.

Mr. SALGADO. I understand.

Chairman GLENN. Those are things you can correct right now and it does not cost money. It is just doing things a different way

out there than we are doing them right now. I do not understand why that takes any time and it does not need any big study to do it; things like whether the State knows, whether there is a permit needed there, whether there are monitoring stations, whether the siting criteria for them is correct or not.

That is criticized in your own report on this, and I compliment you for doing that study. Calibrations of the monitoring station have not been calibrated in a decade. We do not even know whether the material coming out of that is any good or not. Now, that is something that a good manager right there could take care of. That should not require some edict from on high at headquarters.

You have got quality assurance procedures. Are their verification of their data acceptable on a day-in, day-out basis? You question those. Those things are not big budget items for the future. Those are procedural in having somebody that just sits down and uses a little half-way common sense.

So I would think a lot of those things can be corrected by you right now without delay.

Mr. SALGADO. Senator, you will so apprised of our actions within the week.

Chairman GLENN. All right. Good.

We need the nuclear weapons production. No one questions that. We live in an uncertain world and we need that. But these facilities must be safe, and they can be safe. They have been ignored for decades. We have had decades delay on safety. It has not all happened on your watch. I am not inferring that.

But as you indicated, Secretary Herrington started these studies 2 years ago. Now, that is two years of study that we have behind us up to now and we do not have the problem properly defined yet. I understand the difficulty of doing this.

But let me ask this. Can I just get a commitment from you, from DOE, that the Congress will receive within a year a plan, whatever our status of investigation is at that time. We will best define the plan as we can within the next year. Now, that will be a total of three years of study of this.

We would have within the next year—let's say by July 1 of next year—a plan including the goals for the clean up, a set of milestones leading to those goals, and a time table for achieving whatever it is we know about the whole problem, and give it year by year. Could you commit to giving us a plan by 1 July next year, including cost estimates, as best they are? I know they might be difficult to do.

Mr. SALGADO. Senator, I will commit to give you a plan. The quality of that plan I cannot guarantee. All I can do is give you a plan and give you the best data analysis that we can bring together given the current information.

I would like to make one other minor correction, Senator. It is minor in the whole world of problems but, essentially, the environmental survey plans commenced upon the confirmation of our Assistant Secretary in December. We have been at this for approximately 1½ years, moving forward aggressively in this arena. When Mary Walker was confirmed this program got off and running, so that we are moving forward aggressively but we need every month we can get.

Chairman GLENN. OK. I understand that. All I am trying to do is set something so we set something down as definitive and we can do something and get started on this thing.

Mr. SALGADO. You will have it.

Chairman GLENN. As you say, before we are done with this thing it is going to go into the next century. And I would repeat what was said here earlier about the costs. If those costs of $25 to $30 billion to clean up Savannah River and Hanford are in error—they may be—your own estimates show Savannah River somewhere between $2 and $12 billion a little while ago.

Mr. BERUBE. I believe those are the numbers.

Chairman GLENN. All right. Let's say we double that for Hanford—maybe there are different problems, and there are—but let's say you double that. That is $4 to $24 billion right there just for those two sites, if we used that as a rough rule of thumb to go by. And we have many other sites so it does not take much imagination to see that we are talking 40, 50, who knows how many billion dollars. And I would like to get started on the things that can be done.

We have been working on this thing for years now. You have over there the last two years with more definitive studies than were done by your predecessors, or Secretary Herrington's predecessors. And we have been at it here for a lot longer years than that, trying to get a handle on this thing, and we want to do it and get going.

I do not think the American people, the average taxpayer in this country, realizes the enormity of what we are up against. We need the weapons production facilities but we have got to make them safe. A lot of these antiquated facilities, probably parts of them are going to have to be replaced in toto. That is not just a little safety concern here that is $2 to $12 billion. That may be many times that.

We need those facilities. We cannot do without them. We do not have alternate facilities for these. Some of them are single-place facilities, as you people are more aware than I even, that we do not have duplicates where if one does not work we get another one. These are series operations and we have one of each of these series in some cases and they have to work, because we need that capability.

But it has got to be safe and it cannot contaminate. It does us little good to protect ourselves with nuclear weapons in the big context from the Soviets if we poison our own people in the process of doing it. So we want to work with you.

I will just pledge to you that during this year when you are going to get this report together for me that we will work together with you. It is not something where it is us versus the Administration. It is us working together. We have got to do this thing.

I take that as a commitment that we will have some study with some definition to it and some cost hooked up with it defining the priorities, what our year-by-year plan is going to be, and staff can work with staff on what we would like to see in that report, and give it to us as best you can.

I know all your studies will not be definitive and final at that time, but give it to us so we can get going on this. That is impor-

tant. It is important for my home State of Ohio. We have three facilities there I want to see be safe. I get demands all the time about these things. We have held hearings out there, and other people from Washington, and Savannah River and other places have the same kinds of concerns.

We expanded well off the Ohio base some time ago with that GAO study that went nationwide on all the facilities and that is the way we want to address it.

I appreciate you being here this morning and thank you very much. We look forward to working with you. Thank you, much.

Mr. SALGADO. Thank you, Senator.

Chairman GLENN. Our next panel this morning is a panel of labor representatives; Mr. Joseph Misbrener, president, Oil, Chemical and Atomic Workers International Union; Mr. James Kelly, president, Local 8031, United Steel Workers of America, Mr. A. L. O'Connor, president, District 34, International Association of Machinists; Donald Elisburg, counsel, Industrial Union Department, AFL-CIO; and Margaret Seminario, Associate Director, Department of Occupational Safety, Health, and Social Security, AFL-CIO here in Washington.

We welcome you to the witness table this morning and look forward to your testimony. We appreciate you being here and I am sorry we had to put the other group in ahead of you this morning that we had to catch up on from yesterday.

We welcome you this morning, and Mr. Misbrener, we look forward to your statement, either an abridged version or in its entirety either one.

TESTIMONY OF JOSEPH M. MISBRENER, PRESIDENT, OIL, CHEMICAL AND ATOMIC WORKERS INTERNATIONAL UNION; JAMES KELLY, PRESIDENT, LOCAL 8031, UNITED STEELWORKERS OF AMERICA; A. L. O'CONNOR, PRESIDENT, DISTRICT 34, INTERNATIONAL ASSOCIATION OF MACHINISTS; AND DONALD ELISBURG, COUNSEL, INDUSTRIAL UNION DEPARTMENT, AFL-CIO

Mr. ELISBURG. Senator, Ms. Seminario is currently testifying before another Committee, had a conflict, and will be here as soon as she is released.

Chairman GLENN. All right. Fine. Thank you.

Mr. MISBRENER. Thank you, Senator, for the opportunity to testify. We will try in the interest of time to present an abbreviated form of our testimony and hope that the entire text will be entered into the record.[1]

Chairman GLENN. It will indeed.

Mr. MISBRENER. Thank you.

My name is Joseph Misbrener and I am the President of the Oil, Chemical and Atomic Workers International Union, AFL-CIO. I am here today to present testimony on behalf of the AFL-CIO and two of its constitutional departments—the Industrial Union Department and the Metal Trades Department—and, of course, my own union in support of your bill, S. 1085, the Nuclear Protections and Safety Act of 1987.

[1] See p. 207.

We heartily endorse your action in introducing this landmark proposal. We believe it is time to bring the problems of safety of our nuclear plants and facilities and the issues of health and safety of workers in those plants and facilities out of the shadows of mystery and paternalism and into the mainstream of protection for these workers and their families.

This legislation will cover approximately 110,000 DOE workers at nearly 280 facilities which are used in a wide variety of nuclear production. These facilities and the workers in them are presently excluded from the protection of the Occupational Safety and Health Act by virtue of section 4(b)(1) that provides an exemption for facilities covered under the Atomic Energy Act of 1954.

The background of this present legislative effort is quite comprehensive. In the last few years the General Accounting Office, numerous public interest groups, and this committee have engaged in extensive studies of the safety of the many nuclear plants and facilities in the United States. Many of these facilities date from World War II and have aged to the point where there is serious concern with respect to the environmental impact on the communities surrounding these facilities and serious concern with the health hazards to workers operating these facilities.

Serious concern exists with respect to the radiation hazards that workers and their families are exposed to in these facilities as well as to the general public. As these facilities age the evidence available suggests that workers' exposure to the radiation increases dramatically.

Other health effects are also of serious concern. The long latency associated with the development of disease from exposure to many toxic substances used in these facilities require a detailed concern about the extent of exposure to workers in these facilities over the last decades. The ability to determine the degree of radiation exposure to workers, for example, is hampered by the overriding obsession with national security and the heavy secrecy surrounding the operation of these facilities.

We want to have a program of accountability, standards and enforcement. We want to build on the existing statute. For us, OSHA is the state of the art in worker protection. The existing system administered by DOE is the product of another era. It was developed at a time when the mystery of nuclear power overwhelmed our society. The Atomic Energy Act of 1954 that placed all of the responsibility for these safety and health questions in the hands of the Atomic Energy Commission was Congress' response to the twin fears of the times—nuclear power and securing the national security.

We believe that protection of the health and safety of workers in these facilities can be accomplished without sacrificing production quality or the security of our Nation. There is nothing in protecting the national interest that requires the continuation of exemption from OSHA for the Department of Energy, the successor to AEC for managing nuclear programs.

I would like now to be more specific with respect to our concern with the present system and our endorsement of your proposal for improvement. What we presently call the safety and health program for protecting workers at these nuclear facilities is a hodge-

podge of rules and procedures for which the principal need—that of accountability—is sorely lacking.

The health and safety program of DOE is at best an example of failed volunteerism. What may have been considered acceptable for the Atomic Energy Commission a generation ago is simply not now appropriate. What has brought us to this conclusion that the present method is inadequate is the growing realization that the Department of Energy approach does not give priority to the protection of workers. Rather, the program is perceived as supportive of the contractor community as DOE's principal client.

There is a lack of confidence by the workers that DOE even cares about them. In our judgment, it is an affirmation of our longstanding belief that you cannot put the enforcement power in the hands of the agency whose lifeblood is the service performed by the contractors in the DOE production facilities.

Under existing procedures, DOE operates an administrative safety and health program that relies on the good faith of the contractor to carry out its requirements. The process is geared to the relationship between the DOE as the owner and private companies that operate various facilities.

For the most part DOE holds the contractors responsible for carrying out the safety and health program at the facilities. Our main problem, the one that repeats itself over and over, is that no one knows who is minding the store. You will hear from witnesses today that the DOE relationship is totally frustrating and, in the view of many of our members, a program that is not being operated in good faith to the workers for which it is supposed to provide protection.

Under existing procedures with DOE there is no feedback to workers. Complaints are not handled well, if at all. Enforcement of regulations is handled by negotiation between DOE and the contractors and workers must rely on the collective bargaining process to participate in such health and safety programs that do exist.

OSHA, which has substantial expertise, is not allowed in the facilities. Enforcement must not be whimsical and there must be identifiable complaint processes with a known system for enforcement.

All of these requirements do not have to be invented. They are presently embodied in the Occupational Safety and Health Act and will readily adapt to the nuclear industry. We also want to emphasize that we are concerned with more than just radiation problems.

While our members are increasingly concerned over the exposure to workers in plants where DOE has said there is no danger from the radiation, it is the exposure to other substances and the cavalier attitude on basic day-to-day health and safety issues that has caused us to support this change in responsibility.

Mr. Chairman, you are to be commended for this initiative. We fully support your approach as set out in the titles of the bill. We have some suggestions for improving the legislation and we will be pleased to provide our technical suggestions to the Committee as required.

One, we would clarify the duties of the board in title I. We do not believe the board should be structured as an overseer to the Secretary of Labor. It is our understanding that the board is to protect

the surrounding community and is not designed to deal specifically with worker health and safety that is otherwise in the purview of the Secretary of Labor in the bill.

We do not believe a partnership with DOE is envisioned. The Secretary of Labor must have, as in OSHA, the authority to act. Number 3, the Federal workers need a more comprehensive enforcement scheme. Four, the role of NIOSH needs to be clarified and strengthened. We believe that NIOSH must play the principal role in the health effects studies under the legislation and should be given primary responsibility for dealing with radiation and health concerns.

If we are serious about extending to nuclear workers at least the same protections now covering other industrial workers, then all criteria and standards development functions, including those peculiar to the nuclear industry, should be concentrated in NIOSH.

Mr. Chairman, we believe the evidence is substantial and the need is clear. Whatever the prior history and basis for providing the exemption from OSHA, protection for these workers no longer exists. They have real needs and concerns that are not now met by the existing scheme. Accordingly, it is important that S. 1085 proceed speedily to rectify this problem.

Thank you, Mr. Chairman.

Chairman GLENN. Thank you very much.

Mr. Kelly, did you have a statement?

Mr. KELLY. Yes, sir.

Chairman GLENN. I understood you had a statement and Mr. O'Connor has a statement. Mr. Elisburg, you do not have a statement; is that correct?

Mr. ELISBURG. Correct.

Chairman GLENN. How did you get left out?

Mr. ELISBURG. I worked.

Chairman GLENN. Mr. Kelly, go ahead.

Mr. KELLY. Mr. Chairman, my name is James D. Kelly. I am staff representative, currently on leave of absence, for the United Steelworkers of America, serving as president of Local Union 8031, which represents the 2,700 production and maintenance workers at the Rocky Flats Nuclear Weapons Plant at the Department of Energy.

I have been at work at the plant for the better part of 31 years. In addition to being a staff representative with the International Union, I have served as president of the local union for 14 years and vice president there for 3 years. On behalf of all of our members I wish to thank you and your staff for the opportunity of participating in the discussions on Senate bill 1085. It is a long overdue and much needed measure for the workers in the nuclear industry and the public at large.

The fact that the inherent risks associated with nuclear materials and other hazardous materials associated with the production of nuclear weapons demands that objective judgments and decisions be made when the safety and health of the workers and the public are at stake.

It is our opinion that title II of S. 1085, introduced by Senator Glenn, will help accomplish that goal. Over the years it has been our experience that DOE and its contractors frequently have not

been objective when the choice is between safety practices and/or equipment that may conflict with production desires or needs. The cost factor is also always one of the prime factors considered by DOE and its contractors.

We realize that constant production needs must be considered, but they should not be a ruling factor. Safety and health considerations of the workers should be paramount since once injury or health problems occur, that damage in many instances is irreversible.

OSHA and NIOSH have the expertise and experience to make intelligent assessments on matters concerning the health and safety of the workers and the public. They have the benefit of many years experience dealing with a large number of diverse industries. They certainly have a greater inclination to make objective findings than DOE or its contractors.

If OSHA and NIOSH had jurisdiction in the DOE facilities, the suspicion that surrounds assessments of those facilities would be greatly diminished. To put it in common terms, neither the workers nor the public place any degree of confidence on what DOE or its contractors say concerning the safety or health conditions associated with their nuclear facilities. Conversely, they too believe that it is a case of the fox guarding the hen house.

It also seems the rule rather than the exception that DOE will defend the acts of contractors, be they right or wrong. We cannot allow that to continue. The stakes are far too high.

If OSHA and NIOSH were to have jurisdiction at these facilities, another very important facet would be added, that being the power of enforcement to fines or sanctions, none of which exist today. Everything now depends upon voluntary compliance, unless a law or regulation specifically addresses the issue.

Also, the remedies determined would have a time limit built in for compliance. It is ludicrous that the DOE OSHA-type inspection resulted in a 45-day time allowance to correct a locked exit door. It is also ludicrous to have the joint company-union safety committee recommend corrections and after a year's time lapse find that the remedies still had not been implemented.

We are also concerned with the fact that both DOE and the contractor continually try to bar the union's safety representatives from meetings and investigations such as was the case in the recent fatality at Rocky Flats and as was the case in the meeting at Rocky Flats concerning the proposed "test burn" last week. Again, such actions tend to breed increased distrust on the part of the workers and the public. The workers deserve better protection. OSHA and NIOSH would ensure that.

In his written testimony, Mr. Salgado from DOE gave an impressive description of how DOE currently goes further than OSHA requires. That all looks good on paper, but in reality it just has not and does not work that way. DOE nor its predecessors have never done an acceptable job of ensuring that its contractors adhere to stringent safety policy, including enforcement of safe operating procedures and safe nuclear materials limits.

The DOE OSHA-type annual inspection is nothing but a whitewash orchestrated by and to the benefit of the local DOE and contractor management. We have refused in recent years to partici-

pate with them so as not to further glorify it. Mr. Chairman, the time for workers in this industry and the public to have independent surveillance is dangerously overdue.

Mr. Chairman, another item long forgotten or overlooked or both is for the need of the workers and their representatives to have input into the development and safe operating procedures and safety standards. Too many times DOE and its contractors ignore this area and, in fact, resist our attempts to have a voice. That must become our lawful right.

In conclusion, Mr. Chairman, I would like to just give a couple or three fast examples of what I am talking about. One, we recently had a fatality at Rocky Flats, this year. In my opinion this was an exercise in how to commit a fatality. Many safety measures were violated which, had they been followed, this person would have never been working on that job. He would be alive today.

Again recently, in an operating area, supervision caused the transfer of two tanks of plutonium fluids from one tank to another via a simple plastic hose which was really a sampling station. Had this gotten loose—and as Senator Glenn said earlier, some of these places are one of a kind—had this gotten loose we would have lost one of those facilities for some time. It would have contaminated it that bad, not to say how much exposure would have been delivered to the people working in that area.

In another case—and I will conclude with this—we have had three separate agreed to resolutions from the joint company-union safety team at the Rocky Flats plant to install a dedicated neutron alarm system, which is the warning system for the worst possible accident that could happen to you in a plant like this. The system presently is tied into the routine PA system, so when the PA system is down, so is our warning system.

We get excuses like, we do not have the money, we do not have the time, we do not have the manpower. Mr. Chairman, we badly need OSHA, NIOSH, and the protection that would be delivered by your bill. I thank you very, very much on behalf of the Steelworkers at Rocky Flats for giving us the consideration that you have and sharing our needs.

Thank you very much.

Chairman GLENN. Thank you Mr. Kelly. You are dealing with this sort on a front-line basis.

Mr. Misbrener, you are in Colorado, too, are you not?

Mr. MISBRENER. That is right sir, in Denver, Colorado.

Chairman GLENN. So you are familiar with the Rocky Flats operation there.

Mr. MISBRENER. I have some familiarity with that but of course not the detail that Mr. Kelly does.

Chairman GLENN. Mr. Kelly, I was going to follow up. One of my questions to you was on the fatal accident at Rocky Flats in January. As to the way DOE conducted the investigation, do you think OSHA would have done that investigation differently? Have you had experience with OSHA investigations yourself?

Mr. KELLY. Yes, Mr. Chairman, as a staff representative, at all the other plants I have serviced I had access to OSHA. I might say to you that in this case I made an immediate request to have OSHA invited in, not to replace DOE but to parallel.

The family of the deceased worker made a request to have OSHA. The Governor of Colorado attempted to help us. Senator Wirth attempted to help us get OSHA in. All requests were denied, denied at every level of DOE, and we went to every level, including the Washington office. We were never asking for DOE to be replaced as an investigator, simply to have an independent review of the accident.

Chairman GLENN. Very good. That is a very good first hand experience of why I think we need this legislation. Thank you.

Mr. ELISBURG. Mr. Chairman, if I might ask John Molivich to join us here for some of your questions. John is with the United Steelworkers of America National Safety Office and he is a former OSHA inspector and an instructor at their institute and so forth and he is kind of here as one of our experts when we get into that area.

Chairman GLENN. Fine. Go ahead. Do you have any comment on this? And then we will get on to Mr. O'Connor's statement.

Mr. MOLIVICH. Yes, Mr. Chairman. As was said, I was a former OSHA inspector for about 5½ years in the Pittsburgh and Harrisburg, PA, area offices and an instructor at the OSHA Institute. I have just reviewed the accident investigation report, both by DOE and by the local union, our Steelworker local union.

The problems that I saw with it, that there was not enough emphasis put into the training of the worker, previous training, what type of training this person was given in his apprenticeship. The supervisory review that was required of jobs that would be considered hazardous in nature, such as working on high voltage lines was overlooked; there was no supervisory review.

The person was working alone, contrary to policy, a policy that when they are working on hazardous jobs they should not be working alone. That was violated. And the equipment itself was totally inadequate for the job that had to be performed.

Everyone full well knew that this person was going to be working on a 2,200 volt line, electrical line, and when he went to the job he had a piece of test equipment—a multi-tester—that was rated for 500 volts. As a result, all of the reviews that should have taken place, via the supervisor and also the safety department before this job was even initiated, had they have been followed in detail, it would have been discovered long before the employee ever even got to the site that he was, in fact, not equipped to do the job.

Chairman GLENN. Thank you very much.

Mr. O'Connor, president, District 34, International Association of Machinists. You are based where; out of Cincinnati?

Mr. O'CONNOR. Cincinnati, OH.

Chairman GLENN. Fine.

Mr. O'CONNOR. Mr. Chairman, I would like to say first that we do support your legislation, Senate bill 1085.

The Department of Energy plant at Fernald, OH, as you are well aware, is a disaster area. It is an old plant with outdated equipment and unreliable monitoring equipment.

We question how they monitor the uranium and thorium. Plutonium is present in this plant and this plant has not the design or the safety capabilities to control this material. The monitoring of all the host of other toxic chemicals is nonexistent. They are killers

in themselves. The unions and the plant workers got very little notice on their complaints until the Department of Energy contaminated the communities as well.

Do you know that the National Lead of Ohio and the Department of Energy ran Fernald for 35 years without a formal ALARA program, as-low-as-reasonably-achievable? This is a basic health and safety principle in this industry. And they did not have a well documented sampling procedure. They lacked an overall environmental safety and health manual which establishes a criteria for development of procedure, quality assurance requirements relative to environmental safety and health activity.

They did not have a detailed comprehensive environmental monitoring program. There was no specific guidance to other functional organizations regarding environmental safety and health criteria. After 35 years of operation at this plant by the National Lead of Ohio and the Department of Energy.

These facts are unforgivable. The problem in this plant makes it crystal clear that the Department of Energy should not be in the environmental safety and health area at all. It belongs in the hands of well established, competent organizations like OSHA and NIOSH.

The Atomic Energy Commission and the Department of Energy have performed monitoring, testing and sampling in this industry for approximately 50 years. As of today, when asked they will tell you that all they have are preliminary studies and that they are not conclusive.

Workers and the communities around the Department of Energy facilities are not the only ones who have been questioning the DOE on the environmental safety and health practices. The Government itself has published General Accounting Office reports on the Department of Energy and its shortcomings.

The General Accounting Office report EMD-81-108, August 14, 1981, says:

> Major changes are required in the safety and health oversight program at the Department of Energy's contractor-operated nuclear facilities to insure that safety, health and environmental standards are met. This responsibility falls to the operating contractors, which are also responsible for meeting production or program objectives. As a result, safety and health concerns must often compete with program goals.
>
> GAO recommends a major reorganization of DOE's safety and health program as well as other actions to correct program deficiencies. GAO also suggests that the Congress consider legislation to require the Nuclear Regulatory Commission to review the safety of several DOE nuclear facilities.

The report of the Comptroller General of the United States entitled, "Department of Energy's Safety and Health Program for Enrichment Plant Workers" is not adequately implemented.

EMD-80-78, July 11, 1980, is very specific. It recommends to Congress that GAO believes that in order to enhance DOE's ability to enforce safety and health standards and procedures, a program of nonreimbursable fines and penalties similar to that included in the Occupational Health and Safety Act of 1970 is need. Therefore, the GAO recommended that the Congress authorize the Secretary of Energy to institute a program of nonreimbursable fines and penalties for safety and health violations.

It further states:

Before the Department of Labor could administer the safety and health program, either DOE would have to agree not to exercise its present authority, or the Congress would have to rescind DOE's present authority.

I highly recommend that Congress do rescind DOE's authority in the area of environmental health and safety. It is high time our Government put a stop to this mistrust. Who knows better than the plant workers and the public communities how much they have been misled by the Department of Energy and their contractors. The Government itself is not satisfied with the Department of Energy. We must, with this legislation, restore believability in our Government and its concerns for workers and the general public alike.

This industry has no right to be placed outside the standards and regulations that regulate all other industry. Our Government should not use double standards by allowing this to happen. The Department of Energy has generated this situation of mistrust. No other industry could get away with what the Department of Energy has done and has failed to do. We feel that track record has been substandard all the way.

No plant owner in history would incriminate himself. That is why OSHA and NIOSH were put there in the first place, to regulate industry in environmental health and safety. The Department of Energy facilities should be offered the same protection as all other workers in this Nation. We are looking at a problem in this industry that will make the asbestos situation look small.

There is only one way to clear up the whole mess. That is to relegate the authority for environmental safety and health to organizations we can trust like OSHA and NIOSH.

Mr. Chairman, I think your legislation is the doorway that should be opened to get this done. This is a horrible situation and it has got to be taken into control. Just by what I have heard here today, if we are talking billions of dollars to clean up these facilities, that is a disgrace. Because the workers have been trying to tell not only the contractors but the Department of Energy.

I also want to take this time myself to thank you personally for all the help you have been to us in Ohio in the facilities we have there. This legislation has to be passed. There is no other way. We cannot let this go on any longer.

Chairman GLENN. Thank you, Mr. O'Connor. I appreciate that very, very much. You mentioned National Lead of Ohio that ran that plant there at Fernald for some 35 years. We have recently shifted over now to Westinghouse. They have been in there—a year ago January, I believe it was, something like that—about a year and a half now. Has there been a change in the accessibility of information or the operation of the plant there?

Mr. O'CONNOR. I will just say this. They have indicated on paper—in other words, there is the report in with my testimony called Westinghouse Materials Company of Ohio, Volume 4, Environmental Safety and Health. I addressed to you what NLO failed to do in my testimony was out of that report that Westinghouse prepared on NLO's shortcoming.

Let me say this. As late as this year, May 11 and 12 we had a walk around with NIOSH with the Westinghouse Materials people there and also the NIOSH representatives. They had one of the

buildings shutdown. They had a plutonium spill, I found out later, that they did not even tell us about. So as far as being above board and open with us, they did not tell the NIOSH people either.

Chairman GLENN. I was aware of some of the things that have happened there and we were guaranteed absolutely and unequivocally there is not going to be any more cover up of information by whoever runs that plant.

I gave my personal commitment to the people surrounding that plant that we were going to see that the information was open from now on and there would not be any more of the bag house tears that were let go with uranium dust coming out—this happened in years past—where it came down in the community and nobody was even notified. It was not monitored properly. Most of those things I think have been corrected. I hope they have. If they are not we are sure going to stay on that one. The other plants, too. I do not mean just to concentrate this hearing on Ohio solely.

The Department of Energy testified, though, that it gives NIOSH access to its defense production facilities. Does that statement bear out your experience with getting NIOSH into Fernald?

Mr. O'CONNOR. When we first tried to get into Fernald we filed a health hazard evaluation with NIOSH in 1980. That was with the Chemical Workers, the first one that filed. The International Association of Machinists filed one in 1983. We filed another one in 1984 jointly with the International Chemical Workers. To this day—and I just called Friday before I left Dave Bainbridge who is now the director of Cincinnati—we do not have a report yet on this.

Chairman GLENN. Does NIOSH have access into Fernald now?

Mr. O'CONNOR. They do not without the express consent and approval of the Department of Energy.

Chairman GLENN. Well, have those requests been denied recently?

Mr. O'CONNOR. I received two letters, one was from Dr. Melius. I think it took over a year to get the approval from DOE that they would furnish NIOSH the information.

Chairman GLENN. Well, do you know of any requests for NIOSH entry in there that have been refused say in the last year?

Mr. O'CONNOR. No.

Chairman GLENN. OK. I hope not.

Mr. O'CONNOR. Westinghouse has been better.

Chairman GLENN. OK. Mr. Misbrener, you called DOE's health and safety program "failed volunteerism" which is a good term. I sort of like that. I gather you indicate by that that they sort of did whatever safety and health they wanted to do and did not do others no matter what was requested; is that correct?

Mr. MISBRENER. I think that is a kind way to put it. As I sit here and have listened to a bit of testimony that came down this morning, I think one of the things that we have talked about here is accountability and your expressed concern for accountability. What I heard today was one of the reasons that DOE did not want some of the particulars of your bill to be passed is that it takes away the accountability from the Secretary of Energy and gives it to the Secretary of Labor.

We, too, want accountability. When we raise a safety problem in the plants, one of the things that we find is we talk immediately to the contractor at the lowest level, from worker to supervisor. What happens there is that as the process goes through we are referred to DOE. When we go to DOE they refer us back to the contractor and we find ourselves going from door to door without getting any specific answers or anyone who will assume accountability.

So I think not only is the Secretary of Energy concerned about accountability, we are too, and we would like to be able to find out who we can talk to at a plant level to address the safety problems in the industry.

You made a comment earlier, Senator, about the safety in these plants and about the concerns for safety. We cannot express it any more eloquently than you do, but we would like to at least make this point. We are faced with an almost unsolvable situation at the plant level, at the worker level. On one hand we have a public where many people in that general public feel that the only solution to this whole question of nuclear energy and their perception of it is a mushroom cloud that will destroy civilization.

And so their answer is to shut everything down. Stop, do not go any further than you have gone right now, and it does not matter about what has happened there, we will figure out how to correct the pollution and the radiation exposure that people have suffered to this point later on.

And then the agency that we have to deal with in the Government is so concerned about secrecy that they do not want anybody to know that there are workers out there who are exposed on a day-to-day basis. As a consequence, those workers are caught in the middle and they cannot get an ear from anyone.

Your bill, hopefully, will open the door and allow some fresh air into this whole situation, because as we have said in our prepared statement, these people have to come under some protection, they have to be recognized that they are in a business that while dangerous, can be controlled and can be safe, as you pointed out in your comments.

So I, again, applaud you for initiating this kind of legislation.

Chairman GLENN. Thank you very much, gentlemen. We may wish to submit some additional questions to you. We hope you would respond to those so they could be included in the record. We do have two more panels and we are going to have to move along. It is almost 12 o'clock now.

We appreciate very much you coming in today and being here to give us some of these first hand accounts and some of your views on these things.

Thank you very, very much. We appreciate it.

Mr. MISBRENER. May I make just one more statement. I know that the DOE people were here this morning and they talked about the extensive efforts that they are going through to collect the database. I would remind the Senator, and I know you do not need this kind of reminder, but the people we represent and the many workers—as I said in my comments there were over 110,000 workers involved is these kind of operations—these workers are unorganized and do not have the benefit of this kind of representation and rely totally on persons such as yourself.

They are working in these plants. They need the protection now, and I applaud your sense or urgency.

Chairman GLENN. That is exactly what we are trying to give them.

Mr. MISBRENER. Thank you, sir.

Chairman GLENN. Thank you very much. Thank you, gentlemen.

Our next panel, Dr. Philip Landrigan, director, Division of Environmental and Occupational Medicine, Mount Sinai School of Medicine in New York, and Dr. James Melius, Division of Environmental Health Assessment, New York State Department of Health. Gentlemen, we welcome you and look forward to your statement, abridged or in its entirety. In either event the entire statement will be in the record.

Dr. Landrigan, do you want to lead off for us this morning?

TESTIMONY OF PHILIP LANDRIGAN, M.D., DIRECTOR, DIVISION OF ENVIRONMENTAL AND OCCUPATIONAL MEDICINE, MOUNT SINAI SCHOOL OF MEDICINE;[1] AND JAMES M. MELIUS, M.D., APPOINTEE, DIVISION OF ENVIRONMENTAL HEALTH ASSESSMENT, NEW YORK STATE DEPARTMENT OF HEALTH[2]

Dr. LANDRIGAN. Thank you, sir. I will give you my testimony in an abridged form.

My name is Dr. Philip Landrigan. I am director of the Division of Occupational and Environmental Medicine at the Mount Sinai School of Medicine in New York. I have been at Mount Sina: for 2 years. Prior to my coming to Mount Sinai I spent 6 years directing the Division of Surveillance, Hazard Evaluations and Field Studies at the National Institute for Occupational Safety and Health [NIOSH]. I had experience there on several occasions with investigations that our division conducted at DOE facilities. Dr. Melius and I were together for most of those 6 years that I was there, and thus our experiences are largely parallel.

I would like to begin the testimony by expressing my strong support for S. 1085. I think it is a good bill. It is a bill that is necessary. It is made necessary by a series of legitimate and unresolved concerns about the safety of U.S. Government nuclear facilities and about the health of workers in those facilities.

In my opinion the hallmark of the bill and the point which makes it particularly commendable is that it provides the means for independent assessment and independent oversight of issues relating to nuclear health and safety. With regard to Title II, the application of OSHA and NIOSH authority to DOE nuclear facilities, it is my opinion that these provisions are timely and necessary.

I had the experience in 1979 of enduring a run—around of approximately 6 months duration in regard to the Piketon, OH, plant, with which you are intimately familiar, because our group at NIOSH finally got into that plant as the result of your intervention. But the experience that took place at Piketon, which I have recounted in some detail in the testimony, is very similar to that which I just heard described in regard to the Fernald, OH, plant.

---

[1] See p. 216 for the prepared statement of Dr. Landrigan.

[2] See p. 226 for the prepared statement of Dr. Melius.

First, we received a request for health hazard evaluation. We attempted to get in touch with the DOE contractor, who at that time was Goodyear Atomic. They refused even to reply to us, but we received a phone call a week or two later from a DOE attorney who told us that the Piketon plant was owned by DOE and that such facilities are exempt from the provisions of the OSHA Act.

That is a statement that is quite in contrast to what DOE said this morning on page 15 of Mr. Salgado's testimony where he states that it has never been the view of the Department that it is exempt from the requirement that employers cooperate with NIOSH studies. His statement flatly contradicts what the DOE attorney told us in 1979.

There was then a series of fruitless interchanges, and it was not until after you intervened in late November of 1979, virtually 6 months after we had received the original request, that we finally got in to the Piketon plant to do the walk through. When we finally got in things went well. We did what we had to do and we made a series of recommendations.

One added problem comes up, which is not mentioned in my testimony because I did not see its relevance until I arrived here this morning, and saw the testimony which will be presented momentarily by Frank White from OSHA, which notes—page 4—in regard to an inspection that OSHA undertook at a DOE facility in Oak Ridge, TN, that, "DOE accepted a number of these recommendations."

That statement runs directly counter to our experience. When OSHA makes recommendations in a facility in the private sector, the employer is required to accept them all. By contrast, in DOE facilities acceptance is on a voluntary basis. The employer is free to accept some and therefore, presumably, not accept others. That is simply not consistent with proper procedure.

The clear lesson to be learned from this array of episodes is that the present legislative and administrative arrangement whereby DOE facilities are granted an exception from the OSHA Act is ill advised. It should not be allowed to continue.

Because of this arrangement, the procedures and the rules which have been developed at NIOSH and OSHA do not apply with equal force to DOE facilities. As a result, workers in those facilities have less protection from occupational exposures than workers in the private sector. In essence, these workers do not enjoy equal protection under the law.

With regard to title IV, the Radiation Study Advisory Board, I think that this, too, is a very necessary provision. DOE has been undertaking epidemiologic studies for a number of years, some by contractors and consultants such as Dr. Mancuso at Pittsburgh, some in-house, such as the studies that they undertook at the Hanford facility.

There have been serious concerns raised in the past about the oversight of these contracts. Dr. Mancuso's contract, for example, was rescinded, allegedly, when he came up with findings which were inimicable to the interests of the Department. Some of the studies which have been undertaken by DOE scientists have been technically very excellent and people such as myself who have re-

viewed some of these studies find them to be technically competent and probably credible.

But despite the technical competence that surrounds the majority, at least, of these studies, these studies are flawed and tainted all too often in the eyes of the public, and that tainting derives from the fact that DOE is in a dual role in sponsoring these studies.

On the one hand, DOE is an advocate for nuclear production and on the other hand the Department is attempting to protect its workers. That is a position that I think is inherently untenable. In fact, I went so far in my testimony as to suggest that it would actually be to the benefit of DOE and to their scientists to be removed from that position of an inherent conflict of interest and to be put into a situation where their credibility would be safeguarded by an independent advisory board. I should think that the honest and competent scientists within DOE would actually welcome such an arrangement.

Chairman GLENN. So we do have some support for this. As indicated, DOE is not coming out solidly against this. They are for parts of it, as he indicated earlier today. So we are making some progress.

Dr. LANDRIGAN. Yes. I think that is good.

The only specific suggestion I had, Mr. Chairman, in regard to title IV is that you include the Director of the National Institute of Environmental Health Sciences on the list of people to whom the Secretary of HHS shall consult in formulating the membership of the board.

So in conclusion, Mr. Chairman, I would like to reiterate my strong support for this bill, S. 1085, and I would be happy to take any questions.

Chairman GLENN. Thank you, Doctor. We appreciate it. Dr. Melius, do you have a statement?

Dr. MELIUS. Yes. I would like to very briefly review my testimony, the major portion of which is submitted for the record.

I am Dr. Jim Melius. For the past 7 years I have worked at NIOSH, most recently as director of the Division of Surveillance, Hazard Evaluations and Field Studies. I recently left NIOSH and I will be accepting a position with the New York State Department of Health in the next few weeks.

Again, I would also like to indicate my strong support for S. 1085. I believe that independent oversight as outlined in this bill over environmental and occupational safety matters at Department of Energy facilities is badly needed. I believe the bill provides appropriate mechanisms for that oversight without unnecessarily disrupting the work done at these facilities.

Title II, the application of OSHA and NIOSH to DOE nuclear facilities is well supported by the past problems NIOSH and OSHA have had at these facilities, by the testimony from the workers, and by the GAO report on these facilities. This would provide, again, independent oversight over the health and safety matters at these facilities. It would be done in a way that would supplement the current DOE health and safety efforts.

It does not necessarily have to replace those efforts. It could be used to supplement them, provide oversight over what is going on,

and would certainly not lessen DOE's commitment to improving safety and health at these facilities.

I believe that both OSHA and NIOSH have sufficient experience and expertise on board for regulating and evaluating such facilities, albeit there are some unique or specialized operations at these facilities. However, the experience and capability with both OSHA and NIOSH, I think, is sufficient to be able to provide the kind of oversight that is needed.

I think it is important that we not try to look at body counts or what has happened at the past at these facilities as the only justification for providing this kind of oversight. We know that occupational diseases, injury and deaths are occurring at these facilities. A recent study done at the request of Congress at a DOE facility in Oak Ridge found long term neurological damage among workers exposed to mercury at that facility. I am sure that given the past exposures at these facilities that we will find other similar problems among workers at some of the other facilities. However, I think it is much more important that the kind of oversight by NIOSH and OSHA would provide a credible process for overlooking what goes on at these facilities on health and safety matters. It would provide access for inspections for making sure that appropriate regulations are being followed to protect the workers, that appropriate studies are being done, and that appropriate investigations are done of the occurrence of disease and other problems at these facilities.

DOE claims that they currently allow NIOSH full access to these facilities. All that access must be negotiated with DOE. I think we have the example that Mr. O'Connor referred to where it took almost 18 months for NIOSH to get access to records at the Fernald facility.

Chairman GLENN. We may be making progress, though. He said there had not been any refusals in the last year down there at Fernald, so maybe we are making some progress in this area.

Dr. MELIUS. I believe that DOE has been trying to improve that and improve their cooperation.

Chairman GLENN. I think they have, too. I have got to give them credit. I think they are working hard to try and overcome some of these problems. I do not want to make them all the bad guys here.

Dr. MELIUS. But I think that if this access were guaranteed under law and by regulations that would be developed under this law, there would be no questions that a new administrator of DOE could change policy. The access should be guaranteed. The workers there should feel that NIOSH did have full access, that OSHA had full access, and that whatever oversight or investigation was being done was not being controlled by the Department of Energy in any way. That credibility, I think, is the most important benefit from this bill.

Title IV, the Radiation Study Advisory Committee Act, I think would, again, provide the benefits that Dr. Landrigan has already outlined. Other agencies, such as NIOSH have a Board of Scientific Counselors. The National Cancer Institute does. Peer review and oversight by some type of advisory board or board of scientific counselors works very well.

It provides the kind of oversight and credibility needed for these type of expenditures and people can feel that the research being done is being done in a credible fashion, that nothing is being covered up and that the proper studies are being done and the results are being appropriately provided to the workers and to the public from these studies.

In summary, I strongly support this legislation and I believe the extension of OSHA and NIOSH access and oversight to DOE facilities can do a lot to help protect the health and safety of the workers at these facilities, which they greatly deserve.

Chairman GLENN. Thank you very much, Dr. Melius.

Just a couple of questions on this. One of the reasons in the past why DOE historically, going back decades, has not allowed more people in was on the security grounds. That may have had some validity in earlier days more than it has now, and I had not really thought about this before.

Does NIOSH have teams that have special security clearance if there are areas that are a problem? You mentioned Piketon and some of the things there. Now, there is some pretty high level stuff that goes on there at Piketon in years past. Some of it has been curtailed some now, but there were some security concerns there about some of the techniques being used there.

Does NIOSH have teams that have security clearances so they can go into those areas?

Dr. LANDRIGAN. Yes, sir. A high proportion of the NIOSH teams are commissioned officers in the U.S. Public Health Service, so they already have some moderate level of security clearance.

Chairman GLENN. That is very moderate, though.

Dr. LANDRIGAN. That is pretty moderate.

Chairman GLENN. This would require special Q clearances.

Dr. LANDRIGAN. Yes. Some of the people, in fact, got Q clearance for Piketon. That was not a problem, and once they had it we took pains to keep those up.

Chairman GLENN. OK.

Dr. MELIUS. I would estimate that at the present time NIOSH would have on the order of 15 to 25 people with Q clearance.

Chairman GLENN. They would be fully cleared to go into any plant.

Dr. MELIUS. Right.

Chairman GLENN. Fine. Let me ask this, too. You are both familiar with NIOSH, its whole operation. You have been in charge of some of those operations there. OSHA and NIOSH both, I have been very concerned that both of them are a very thin red line out there.

I remember seeing some figures back a few years ago that with the current number of OSHA inspectors and the number of facilities they have to inspect, your odds of getting a thorough inspection—not just on nuclear facilities, I am talking about just general industrial facilities across the country—it is like you get investigated or checked once every 5 years or something like that.

Dr. LANDRIGAN. We used to say, Mr. Chairman, that there were more fish and game wardens in Ohio than there were OSHA inspectors across the Nation. The basic problem is those agencies are just financially strapped.

Chairman GLENN. Well, my question is this. I know that to be the case. Now, what is going to happen if we put a new load on them. We have 21 major sites in this nuclear chain or weapons production across the country here. Are we running it even more thin? Are we going to need additional resources in NIOSH and OSHA in order to do the job here? How many and how much would it cost? Do you have any wild estimate on that?

Dr. LANDRIGAN. I do not want to put myself in the position of speaking for the agency since I am no longer with them, but there is no question that they are going to need both positions and dollars to do the job. If they receive this responsibility and do not get the positions and the dollars, it will just be a fiasco.

Chairman GLENN. OK. That is one we ought to do some more work in looking into as to what the numbers of increase in personnel and expenses will be with this, because we are already short on OSHA and NIOSH and to spread them even thinner just means—well, that is an intolerable situation, too.

Dr. MELIUS. I think it is important that the core capability is there. It would be helpful to supplement it with the resources, but they have the experience and the capability now to provide the oversight.

Chairman GLENN. Well, is that true? Do we have the technical capability within NIOSH right now to do this job if we assign it to them, or would that have to be brought in? Do we have the technical capability and the numbers of people to carry it out if it was assigned?

Dr. LANDRIGAN. Yes. A good credible investigation was done at Piketon when we finally got in.

Chairman GLENN. All right. Fine.

Thank you, gentlemen. We may have some additional followup questions on this. We appreciate your patience this morning in waiting as long as you have here and we appreciate your testimony. You both have a lot of expertise in this area and we appreciate it.

Dr. LANDRIGAN. Thank you.

Dr. MELIUS. Thank you.

Chairman GLENN. Thank you, much.

Our next and final panel, Frank White, Deputy Assistant Secretary, Occupational Safety and Health Administration, U.S. Department of Labor, and Dr. Edward Baker, Acting Deputy Director, National Institute of Occupational Safety and Health, U.S. Department of Health and Human Services.

Gentlemen, welcome. You have been very patient. I am sorry the hearing has gone on so long, but we have to put the first panel on here that was left over from yesterday. So we appreciate that very much.

Your entire statements will be included in the record. If you could give an abridged version, that might help this morning some a little bit here, but in either event your entire statement will be included.

Mr. White, go ahead.

TESTIMONY OF FRANK WHITE, DEPUTY ASSISTANT SECRETARY, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, U.S. DEPARTMENT OF LABOR;[1] AND EDWARD BAKER, M.D., ACTING DEPUTY DIRECTOR, NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH, U.S. DEPARTMENT OF HEALTH AND HUMAN RESOURCES [2]

Mr. WHITE. Thank you, Mr. Chairman.

I appreciate the opportunity to discuss with the Committee OSHA's position with respect to Title II of S. 1085. I will try to give a quick summary of the reasons for some of OSHA's reservations about title II.

We have four basic areas of concern. First, with respect to the purpose and effect of title II. As drafted, Mr. Chairman, the amendment of section 4(b)(1) of the Occupational Safety and Health Act, which is at the heart of section 202 of the bill, would result in both DOE and OSHA having overlapping authority over the same work sites.

OSHA has consistently and vigorously supported the principles underlying section 4(b)(1), namely that it is in the best long term interest of safety and health as well as in the best interests of efficient allocation of Government resources to avoid duplication of responsibility for worker protection. Section 4(b)(1) assures that the agency electing to exercise its authority over worker protection is fully accountable for its program.

OSHA fears that the erosion of this accountability inherent in section 202 may not be the best way to upgrade worker protection at DOE sites and would create an unfortunate precedent.

A second and more parochial concern is the added strain on OSHA's already considerable responsibilities that would result from Title II, a concern to which you just alluded. You indicated that your impression from previous hearings was that we only got to work sites once every 5 years. Frankly, we hit 2 percent of all work sites a year, which means one in every 50 years. Now, some industries we target more heavily than others, so we may make the one in every 5 years in some facilities, but on the average for targeted and untargeted inspections it is 2 percent of the workplaces each year.

Chairman GLENN. That is much worse than I thought it was.

Mr. WHITE. Well, it is getting worse.

Chairman GLENN. Of the targeted industries, which would be your record, then? Every 3 years, 5 years, in targeted industries where you have health hazards?

Mr. WHITE. For example, in the manufacturing sector I believe we hit about 9 percent of the manufacturing sector every year, so that comes out to once every 10 years. However, due to complaints and other types of inspections we do, in fact, hit many of those companies more often.

Chairman GLENN. How about chemical industries and those that have more carcinogenic materials that they are working with in chemical processes. How often would those get inspected?

---

[1] See p. 232 for the prepared statement of Mr. White.

[2] See p. 252 for the prepared statement of Dr. Baker.

Mr. WHITE. The chemical industry has traditionally been a low hazard industry in terms of safety conditions, so our targeting system does not hit them very heavily. We do do a significant number of health inspections in the chemical industry.

Chairman GLENN. In areas like polyvinyl chloride, PCP's, where these things are around, how often do you target industries that are dealing with materials like that?

Mr. WHITE. We do have a targeting system for health inspections, but our health inspections are far less proportionately than our safety inspections. Some operations we will hit as often as once a year with respect to health, but by and large it is once every 3 years for health targeted industries.

Another example, Mr. Chairman, OSHA currently performs about 8,000 inspections per year as the result of employee complaints. These inspections by law have our highest priority. While we do not have a substantial backlog of complaints, the complaint workload in many of our area offices impedes sometimes significantly our ability to perform programmed or targeted inspections in other important areas.

The additional responsibilities that would be associated with Title II would further strain OSHA's ability to carry out a balanced program across the wide spectrum of industries OSHA must regulate.

Third, the simple fact is that DOE apparently has the capacity to perform at least one complete inspection per year at each covered site in addition to investigating complaints and accidents. OSHA could not hope to duplicate or even significantly supplement that effort. With the resources currently at DOE's disposal, OSHA would hope that any deficiencies in DOE's program could be remedied in ways other than adding OSHA's far more limited resource capabilities to the equation.

Fourth and finally, the knowledge and experience of DOE's safety and health personnel with respect to these in many ways unique facilities and the concomitant lack of knowledge and experience of OSHA's personnel in these areas should not be overlooked, we think.

In closing, I would merely add our willingness to make available our expertise in occupational safety and health to the Committee to help formulate ways to assist DOE, short of amendments to the Occupational Safety and Health Act, in our mutual efforts to provide a safe and healthful workplace for the workers at these sites.

That concludes my statement.

Chairman GLENN. OK, thank you. I would welcome staff contacts on this so we work out any differences you have here and take those under advisement here and work out some changes here, the ones that you suggest. I will instruct the staff to consult with you on that.

Dr. Baker, do you have comments?

Dr. BAKER. Yes. I am Dr. Edward Baker, Acting Deputy Director of the National Institute for Occupational Safety and Health. I had hoped to be able to say that accompanying me today is Mr. Phil Bierbaum. Unfortunately, Mr. Bierbaum is in Cincinnati. Due to weather conditions his flight could not depart, so if there are detailed questions that you would like for us to answer, we will be

happy to do that for the record. He would certainly have been able to do so had he been here.

Chairman GLENN. Fine.

Dr. BAKER. I would like to address briefly our remarks to title IV of S. 1085, since that was the invitation of your committee. We applaud the goal of title IV in seeking a better understanding of the health effects of radiation through epidemiologic studies. We also applaud the provisions of title IV which are designed to ensure that epidemiologic studies conducted by DOE are subject to careful peer review. In fact, the NIOSH experience indicates that the subjection of its study protocols and study results to peer review has been of great value and has enhanced both the quality and credibility of NIOSH research.

We appreciate the intent of title IV to ensure that DOE epidemiologic studies are reviewed in an objective an competent manner. However, we do not believe that the creation of yet another Federal advisory board is necessary to accomplish that singular purpose.

Epidemiologic studies and investigations have been an integral part of the overall NIOSH program since the Institute's creation. Those studies and investigations have provided important inputs into NIOSH recommendations. However, we have rarely found instances where epidemiologic study or other investigation results could be considered independent of other occupational and safety health issues.

Therefore, we believe it would be more appropriate for any independent review of DOE epidemiologic study proposals to be made part of a broader occupational safcty and health oversight group to the DOE. The creation of a Federal advisory board merely to review epidemiologic study proposals would be neither efficient nor appropriate for the development and maintenance of an effective occupational safety and health program, nor would it be often specialized enough to offer significant peer review comments for scientific or technical merit on specific projects.

A variety of other efficient and appropriate methods could be developed utilizing consultants, ad hoc review panels, or a board of scientific advisors and we would be happy, certainly, to share our experience in that area with the committee as you would so specify.

NIOSH is certainly willing to cooperate in any way by providing experts from its own staff to serve on ad hoc review panels or to serve as consultants to any oversight group that might be constructed. NIOSH has certainly conducted epidemiologic investigations at DOE facilities and we are convinced from that experience that the Department is making a serious attempt to utilize epidemiologic research as an important basis for improving its program of protecting worker health and safety.

This concludes my testimony. I am happy to answer any questions you might have.

Chairman GLENN. My questions center in one area, and I have already touched on it, and you mentioned it, too. And that is the ability to do the job with the people you have, both NIOSH and OSHA. I would seek your counsel and guidance in this area.

Are we going to have to expand tremendously? We are taking on 21 major sites and many facilities on each one of those general sites. This is no small job, and I guess the first question would be do you have already numbers of people with radiological expertise that could be assigned to do this job if this legislation passes and goes through as envisioned? Or are you going to have to go out and hire people to do this?

Have you made any estimate of the numbers of people that would be required to really get into this? Because at least in the opening stages it is going to require quite a bit of effort and expense, and you are already spread very thinly in your efforts.

Number 1, do you have the expertise? Does OSHA have the same security clearance type thing that was mentioned a moment ago in NIOSH?

Mr. WHITE. We do have a number of inspectors with Q clearances.

Chairman GLENN. So that is not a major problem?

Mr. WHITE. That should not be a problem.

Chairman GLENN. How about the technical expertise? This is a very highly technical area.

Mr. WHITE. We do have some expertise. We do do some inspections involving radiation hazards, primarily non-ionizing.

Chairman GLENN. Would this require a major expansion of your operation with this expertise?

Mr. WHITE. Once again, Senator, that would depend on how many inspections we could do. If we were expected to inspect every site fully and comprehensively every year or every 2 years, I would say that our current resources may have to be examined to determine whether we really do have sufficient capacity.

Chairman GLENN. Well, I would think in the initial stages, this has been neglected so long, it might require much more than once a year, at least for a while until you get things going.

Mr. WHITE. Well, we have found that when we do the very intensive inspections we may be at a site for 6 months or longer to do a full inspection, and certainly that would be a significant drain on our resources, initially anyway.

Chairman GLENN. What has happened to the OSHA budget recently? Have you had cuts?

Mr. WHITE. It is creeping upward again, Mr. Chairman, I am pleased to say.

Chairman GLENN. How much were you cut back by this administration?

Mr. WHITE. I do not have those exact numbers. I believe, frankly, that the overall budget since, say 1980 has increased. In other words, our budget in 1987 is more than it was in 1980.

Chairman GLENN. But you went through some very low years along about 1982 and 1983, did you not, as I recall? Because I was trying to get more money for OSHA at that time and was not able to do it.

Mr. WHITE. We did take some significant cuts and that resulted in some loss of personnel and we are now coming back up again. But yes, over the past 6 or 7 years we have lost some staff.

Chairman GLENN. How about NIOSH?

Dr. BAKER. Since 1980 NIOSH's budget has fallen considerably. My recollection—and staff could probably correct my memory—is that we feel from approximately $85 million to around $65 million in the current fiscal year. We have not seen an uprise significantly in our resources, at least over the last couple of years, to my knowledge.

Chairman GLENN. You have been cut overall about a fourth while your job has increased?

Dr. BAKER. That is correct.

Chairman GLENN. That is false economy.

Dr. BAKER. I can if you like respond to some of the specifics as it relates to our resources concerns, which we certainly would share. We have looked at the three investigations that we have been involved with recently—one at Fernald, one at Piketon, and the third at Oak Ridge—to estimate what our cost were in performing those three investigations. These three total approximately $700,000 and approximately nine person-years of experience for doing just those three investigations.

We do have people in-house now who can perform epidemiologic investigations, who can perform sampling at certain sites, and we do have approximately five people with radiation experience per se. Certainly if the volume increased, we would have to increase our staff resources and we would be very concerned about being able to do so.

Chairman GLENN. You have not done any talking to DOE yet, have you, about what the estimate would be or what they see as the number of inspectors that might be required or anything like that? I guess that is premature with the legislation still being considered.

Dr. BAKER. We have not had any discussions like that.

Mr. WHITE. Nor have we, sir.

Chairman GLENN. I do not expect you to start a 2-year study of this, but I would appreciate a letter back from each of you outlining as best you can right now what you would see the job as being if the legislation goes through, because a factor in the passage of this will be the expense of it, and as far as I am concerned, I think the requirement for this goes beyond whatever the expense is. We have to do this.

I would appreciate a letter back from each of you giving some estimate—it may be crude and you can say that in your letter, that it is a preliminary estimate—but as to what the requirement would be, the number of man-years or however you do these things to inspect these 21 sites and what is going to be required in the way of resources for you, personnel and money, and equipment, if that is necessary, to really do the job that has to be done.

You are both familiar with what we are trying to do. I do not need to outline it here again. Staff can work with you on some of these details, but I think it is important for our committee deliberations to know that.

Mr. WHITE. We would be happy to do that, Senator.

Dr. BAKER. As we would.

Chairman GLENN. All right. Good.

Thank you, gentlemen. I appreciate it. Thank you much. It has been a long hearing this morning and we appreciate your patience with us.

The hearing will stand in recess subject to the call of the Chairman.

[Whereupon, at 12:25 p.m., the Committee adjourned subject to the call of the Chair.]

APPENDIX

100TH CONGRESS
1ST SESSION

S. 1085

To create an independent oversight board to ensure the safety of United States Government nuclear facilities, to apply the provisions of OSHA to certain Department of Energy nuclear facilities, to clarify the jurisdiction and powers of Government agencies dealing with nuclear wastes, to ensure independent research on the effects of radiation on human beings, and for other purposes.

IN THE SENATE OF THE UNITED STATES

APRIL 23 (legislative day, APRIL 21), 1987

Mr. GLENN introduced the following bill; which was read twice and referred to the Committee on Governmental Affairs

---

A BILL

To create an independent oversight board to ensure the safety of United States Government nuclear facilities, to apply the provisions of OSHA to certain Department of Energy nuclear facilities, to clarify the jurisdiction and powers of Government agencies dealing with nuclear wastes, to ensure independent research on the effects of radiation on human beings, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE

SECTION 1. That this Act may be cited as the "Nuclear Protections and Safety Act of 1987".

TITLE I—INDEPENDENT NUCLEAR SAFETY BOARD OVERSIGHT OVER DEPARTMENT OF ENERGY FACILITIES

SHORT TITLE

SEC. 101. This title may be cited as the "Department of Energy Nuclear Safety Board Oversight Act of 1987".

FINDINGS AND PURPOSE

SEC. 102. (a) The Congress finds that—

(1) there is a great need for vigorous investigation of events at nuclear facilities controlled by the Department of Energy; and

(2) continual review and assessment by expert outside authorities would be of assistance in identifying actual or potential safety problems and needed standards at these nuclear facilities.

(b) The purpose of this title is to establish an Independent Department of Energy Nuclear Safety Board which shall promote nuclear safety at Department of Energy nuclear facilities by—

(1) annually reviewing and evaluating the implementation of health and safety standards, as well as all applicable Department of Energy Orders at each nuclear facility;

(2) conducting independent investigations of events at Department of Energy nuclear facilities;

(3) reviewing and assessing the content and application of all Orders governing Department of Energy nuclear facilities;

(4) recommending to the Department of Energy improvements in its nuclear facilities, operations, and health and safety standards; and

(5) informing the Congress of its findings and recommendations.

ESTABLISHMENT OF NUCLEAR SAFETY BOARD

SEC. 103. Title II of the Energy Reorganization Act of 1974 (42 U.S.C. 5841 et seq.) is amended by adding at the end thereof the following new section:

"INDEPENDENT NUCLEAR SAFETY BOARD

"SEC. 212. (a) There is established a Department of Energy Nuclear Safety Board (hereafter in this section referred to as the 'Board').

"(b)(1) The Board shall be composed of 3 members appointed by the President, by and with the advice and consent of the Senate, from among respected experts in the field of nuclear safety with a demonstrated competence and knowledge relevant to the independent investigative and prescriptive functions of the Board. No more than 2 members of the Board shall be of the same political party. Not later than 90 days after the date of the enactment of this section, the President shall submit such nominations for appointment to the Board.

"(2) Any vacancy in the membership of the Board shall be filled in the same manner in which the original appointment was made.

"(3) No member of the Board shall have any significant financial relationship in any firm, company, corporation, or other business entity engaged in activities regulated by the Commission either as licensee or contractor, or have such a relationship within the 2 years preceding his appointment.

"(c)(1) The Chairman and Vice Chairman of the Board shall be designated by the President. The Chairman and Vice Chairman may be reappointed to such offices.

"(2) The Chairman shall be the chief executive officer of the Board and shall, subject to such policies as the Board may establish, exercise the functions of the Board with respect to—

"(A) the appointment and supervision of personnel employed by the Board;

"(B) the organization of any administrative units established by the Board; and

"(C) the use and expenditure of funds.

The Chairman may delegate any of the functions under this paragraph to any other member or to any appropriate employee or officer of the Board.

"(3) The Vice Chairman shall act as Chairman in the event of the absence or incapacity of the Chairman or in case of a vacancy in the office of Chairman.

"(d)(1) Except as provided under paragraph (2), the members of the Board shall serve for terms of 6 years. Members of the Board may be reappointed.

"(2) Of the members first appointed—

"(A) one shall be appointed for a term of 2 years;

"(B) one shall be appointed for a term of 4 years; and

"(C) one shall be appointed for a term of 6 years, as designated by the President at the time of appointment.

"(3) Any member appointed to fill a vacancy occurring before the expiration of the term of office for which such member's predecessor was appointed shall be appointed only for the remainder of such term. A member may serve after the expiration of the member's term until a successor has taken office.

"(4) Any member of the Board may be removed by the President for inefficiency, neglect of duty, or malfeasance in office.

"(e) Two members of the Board shall constitute a quorum for issuing reports, but a lesser number may hold hearings.

"(f) The Board shall hire such staff and make such expenditures for consultants and services as are necessary.

"(g) The Board shall have the following functions:

"(1) The Board shall annually review and evaluate the implementation of health and safety standards, as well as all applicable Department of Energy Orders, at each Department of Energy nuclear facility. The Board shall annually review and assess the content and application of all Orders governing Department of Energy nuclear facilities, and recommend necessary changes in their content and application.

"(2)(A)(i) The Board shall investigate those events at Department of Energy nuclear facilities which the Board determines to be significant because of possible adverse effects on the health or safety of the public or because such events could be the precursors of events that may adversely affect the health or safety of the public.

"(ii) The Board may request the Secretary of Energy to make an investigation of the events described in subdivision (i) and to report its findings to the Board in a timely fashion. Whenever the Board concludes such an investigation, the Board may analyze the findings of the Secretary for the purpose of making its own conclusions and recommendations.

"(B) The purpose of any Board investigation under this paragraph shall be—

"(i) to determine if the Secretary is adequately implementing health and safety standards, as well as all applicable Department of Energy Orders, at Department of Energy nuclear facilities;

"(ii) to ascertain information concerning the circumstances of the event involved, and its implications for the public health and safety;

"(iii) to determine whether such event is part of a pattern of similar events at other Department of Energy nuclear facilities which could adversely affect the public health or safety or which could be the precursor of events which could adversely affect the public health or safety; and

"(iv) to provide such recommendations to the Secretary for changes in Department of Energy Orders, safety regulations and requirements, and other regulatory policy as may be prudent or necessary.

"(C) For the purpose of this paragraph, the term 'event' shall include an action or failure to act by any person, including the Secretary, or a continuing series of actions or failures to act by any person, including

the Secretary, including operational failures, that the Board determines to have an actual or potentially adverse effect on public health and safety as provided in this paragraph.

"(3) The Board shall have access to and may systematically analyze operational data from any Department of Energy nuclear facility to determine whether there exist certain patterns of events that indicate safety problems.

"(4) The Board may conduct special studies pertaining to safety at any Department of Energy nuclear facility.

"(5) The Board may evaluate information received from the scientific and industrial communities, and from the interested public, with respect to—

"(A) events with actual or potential adverse effects on health and safety; or

"(B) suggestions for specific measures to improve health and safety at Department of Energy nuclear facilities.

"(6)(A) The Board shall recommend to the Secretary those specific measures that should be adopted to minimize the likelihood that events will occur at any Department of Energy nuclear facility which could adversely affect the public health or safety. The Secre-

tary shall respond in writing to the recommendations of the Board within 120 days of receipt of such recommendations. Such written response shall detail specific measures adopted by the Secretary in response to such recommendations.

"(B) The recommendations of the Board made pursuant to subparagraph (A) shall also be sent to Congress, and when possible, made available to Federal, State, and local government agencies, concerned with health and safety at Department of Energy nuclear facilities, and to the public.

"(7)(A) The Board may establish reporting requirements which shall be binding upon the Secretary.

"(B)(i) The information which the Board may require to be reported under this paragraph may include any materials designated as classified material pursuant to the Atomic Energy Act of 1954, or any materials designated as safeguards information and protected from disclosure under section 147 of the Atomic Energy Act of 1954.

"(ii) Information received by the Board may be made available to the public upon identifiable request, and at reasonable cost. Nothing contained in this section shall be deemed to require the release of any information described by subsection (b) of section 552 of

title 5, United States Code, or which is otherwise protected by law from disclosure to the public.

"(C) Notwithstanding any provision of law, the Secretary of Energy and all contractors operating Department of Energy nuclear facilities shall fully cooperate with the Board in the investigations and provide ready access to such facilities and to all information necessary to complete the review and evaluation of the Board.

"(D) In order to protect information, the Secretary of Energy may deny access to information received by the Board to any person who—

"(i) has not been granted an appropriate security clearance or access authorization by the Secretary of Energy; or

"(ii) does not need such access in connection with the duties of such person to enforce this paragraph.

"(8) The Board shall issue periodic reports which shall be made available to the Congress, and when possible, to Federal, State, and local government agencies, and the public concerned with health and safety at Department of Energy nuclear facilities. Such reports shall contain recommendations of specific measures to reduce the likelihood of occurrence of nuclear

events similar to those investigated by the Board and of corrective steps to enhance or improve safety conditions at such facilities investigated by the Board and other facilities as considered appropriate by the Board.

"(h)(1) Within 1 year after the receipt of the first annual review issued by the Board pursuant to subsection (g)(1), and for each subsequent annual review issued by the Board, the Secretary of Energy shall implement each recommendation of the Board with respect to each operating Department of Energy nuclear facility covered by the report unless the Secretary notifies the Board and the Congress (and includes specific facts and findings in support) that implementation of the recommendations cannot be accomplished because—

"(A) it is technically infeasible; or

"(B) the President specifically exempts the facility from implementing the recommendations by determining it is in the paramount interest of the United States to do so.

"(2)(A) Any exemption granted under paragraph (1) shall be for a period not in excess of 1 year, but additional 1 year exemptions may be granted upon the President's making a new determination. The President shall report each January to the Congress regarding all exemptions from the Board's recommendations granted during the preceding cal-

endar year, together with specific facts and findings in support of granting each such exemption.

"(B) If the reason for an exemption granted under paragraph (1) is, in whole or in part, the cost of implementing the recommendation, no such exemption may be renewed due to lack of appropriation unless the President shall have specifically requested such appropriations as a part of the budgetary process, and the Congress shall have failed to make available such requested appropriation.

"(i)(1) The Board or, on the authorization of the Board, any member thereof, may, for the purpose of carrying out the provisions of this section, hold such hearings and sit and act at such times and places, and require, by subpena or otherwise, the attendance and testimony of such witnesses and the production of such evidence as the Board or an authorized member may find advisable.

"(2)(A) Subpenas may be issued only under the signature of the Chairman or any member of the Board designated by him and shall be served by any person designated by the Chairman or any member. The attendance of witnesses and the production of evidence may be required from any place in the United States at any designated place of hearing in the United States.

"(B) Any member of the Board may administer oaths or affirmations to witnesses appearing before the Board.

"(C) Any person who willfully neglects or refuses to qualify as a witness, or to testify, or to produce any evidence in obedience to any subpena duly issued under the authority of this paragraph shall be fined not more than $500, or imprisoned for not more than 6 months, or both. Upon certification by the Chairman of the Board of the facts concerning any willful disobedience by any person to the United States Attorney for any judicial district in which the person resides or is found, the United States Attorney may proceed by information for the prosecution of the person for the offense.

"(j) For purposes of this section, the term 'Department of Energy nuclear facility' means—

"(1) a production facility or utilization facility (as defined in section 11 of the Atomic Energy Act of 1954 (42 U.S.C. 2014)) under the control or jurisdiction of the Secretary of Energy;

"(2) a facility subject to such Act (42 U.S.C. 2011 et seq.) under the control or jurisdiction of the Secretary; and

"(3) a waste storage facility under the control of jurisdiction of the Secretary, other than a facility developed pursuant to the Nuclear Waste Policy Act of 1982 (42 U.S.C. 10101 et seq.) and licensed by the Nuclear Regulatory Commission.

The term does not include facilities or activities covered under Executive Order 12344 (codified in 42 U.S.C. 7158).

"(k) There are hereby authorized to be appropriated for each of the fiscal years 1988, 1989, 1990, 1991, 1992, and 1993 the sum of $5,000,000.".

ASSISTANCE BY OTHER AGENCIES

SEC. 104. (a) Section 29 of the Atomic Energy Act of 1954 (42 U.S.C. 2039) is amended by—

(1) inserting "a." before "There is hereby established"; and

(2) adding at the end thereof the following new subsection:

"b. (1) The Advisory Committee on Reactor Safeguards shall provide assistance as requested by the Independent Nuclear Safety Board (as established in section 212 of the Energy Reorganization Act of 1974).

"(2) To assist the Board, the Advisory Committee on Reactor Safeguards is authorized to expand its membership by up to 5 additional members and corresponding staff which shall be dedicated to assisting the Independent Nuclear Safety Board.

"(3) The Secretary of Energy shall fully reimburse the Advisory Committee on Reactor Safeguards for all costs incurred in assisting the Board for activities conducted pursuant to this subsection.".

(b) Section 309 of the Department of Energy Organization Act (Public Law 95–91; 42 U.S.C. 7158) is amended by inserting at the end thereof the following:

"(c) The Director of the Naval Nuclear Propulsion Program may from time to time provide assistance and advice to the Board.".

ASSISTANCE BY THE NATIONAL ACADEMY OF SCIENCES

SEC. 105. (a) In order to assist the Board in conducting the first annual review, the National Academy of Sciences or some other independent group or organization of experts chosen by the Board shall evaluate and interpret the differences between Nuclear Regulatory Commission regulations and Department of Energy Orders governing nuclear facilities, including but not limited to the implications for safety.

(b) There are hereby authorized to be appropriated such sums as are necessary to carry out the provisions of subsection (a).

TITLE II—APPLICATION OF OSHA AND NIOSH TO DOE NUCLEAR FACILITIES

FINDINGS AND PURPOSE

SEC. 201. (a) Congress finds that—

(1) worker health and safety at Department of Energy nuclear facilities could be made substantially safer by applying the standards developed by experts in the field of occupational health and safety;

(2) the Secretary of Labor has a longstanding responsibility for the health and safety of workers (including the enforcement of occupational health and safety standards and other protective labor standard programs) and could provide substantial assistance in creating and enforcing the standards; and

(3) the Secretary of Health and Human Services has a continuing responsibility for evaluating health needs related to radiation and toxic substances standards and could provide substantial assistance in creating and enforcing the standards.

(b) The purpose of this title is to provide and enforce better standards for employee health and safety at Department of Energy nuclear facilities.

APPLICATION OF OSHA TO DOE NUCLEAR FACILITIES

SEC. 202. (a) Paragraph (1) of section 4(b) of the Occupational Safety and Health Act of 1970 (29 U.S.C. 653(b)(1)) is amended to read as follows:

"(1)(A) Notwithstanding any other provision of this Act, this Act shall apply with respect to employment performed in—

"(i) a production facility or utilization facility (as defined in section 11 of the Atomic Energy Act of 1954 (42 U.S.C. 2014)) under the control or jurisdiction of the Secretary of Energy;

"(ii) a facility subject to such Act (42 U.S.C. 2011 et seq.) under the control or jurisdiction of the Secretary; and

"(iii) a waste storage facility under the control of or jurisdiction of the Secretary.

"(B) This subsection shall not apply to a facility or activity covered under section 309 of the Department of Energy Organization Act (42 U.S.C. 7158).".

(b)(1) All regulations and standards relating to occupational health and safety applicable to nuclear facilities described in section 4(b)(1) of the Occupational Safety and Health Act of 1970 (as amended by subsection (a)) that are in effect on the date of enactment of this Act shall remain in effect until superseded by regulations and standards promulgated by the Secretary of Labor in accordance with paragraph (2).

(2) After consultation with the Secretary of Energy and employee representatives, the Secretary of Labor shall promulgate regulations to govern the application of such Act to such facilities. The regulations shall include—

(A) the occupational health and safety standards to be applied to such facilities, subject to paragraph (3); and

(B) the manner and process for enforcement of the standards, which shall include provisions for—

(i) the safeguarding of information, consistent with the needs of employees of the Occupational Safety and Health Administration;

(ii) mechanisms and processes for enforcement, including the right of entry for unannounced inspections without probable cause;

(iii) receipt of complaints from individuals and protection of the individuals from retribution for making the complaints; and

(iv) such other regulations as are necessary to carry out this title and the amendments made by this title.

PERFORMANCE OF NIOSH FUNCTIONS AT DOE NUCLEAR FACILITIES

SEC. 203. Section 22 of the Occupational Safety and Health Act of 1970 (29 U.S.C. 671) is amended by adding at the end thereof the following new subsection:

"(g) Notwithstanding any other provision of this Act, the Director and the Institute shall perform functions authorized by this Act at nuclear facilities described in section 4(b)(1).".

COOPERATION WITH INSPECTIONS AND INVESTIGATIONS

SEC. 203. Section 8 of the Occupational Safety and Health Act of 1970 (29 U.S.C. 657) is amended by adding at the end thereof the following new subsection:

"(h)(1) Except as provided in paragraph (2), the Secretary of Energy and each contractor operating a nuclear facility described in section 4(b)(1) shall—

"(A) cooperate with the Secretary of Labor and the Secretary of Health and Human Services in the conduct of an inspection or investigation under this Act at such facility;

"(B) grant access to such facility to enable the conduct of such inspection or investigation; and

"(C) provide all information that is necessary to conduct such inspection or investigation.

"(2) To protect the confidentiality of information, the Secretary of Energy may deny access to any person who—

"(A) has not been granted a security clearance or access authorization by the Secretary; or

"(B) does not require such access in connection with the duties of such person to enforce this Act.".

TITLE III—MIXED HAZARDOUS WASTE

SHORT TITLE

SEC. 301. This title may be cited as the "Mixed Hazardous Waste Amendment Act of 1987".

FINDINGS

SEC. 302. The Congress finds that—

(1) the generation, transportation, treatment, storage, and disposal of solid waste mixed with radioactive material poses potential hazards to public health,

safety, and environment unless carefully planned and managed;

(2) the Department of Energy's facilities are actual or potential producers of such solid waste mixed with radioactive material; and

(3) the authority of the Environmental Protection Agency and authorized States to regulate the disposal of solid waste mixed with radioactive material at the Department of Energy's facilities should be clarified.

PURPOSE

SEC. 303. The purpose of this title is to clarify the intent of Congress that the generation, transportation, treatment, storage, and disposal of solid waste mixed with radioactive material at Department of Energy facilities, including facilities not licensed for the disposal of radioactive materials is subject to the Solid Waste Disposal Act (42 U.S.C. 6901 et seq.).

CLARIFYING AMENDMENT TO DEFINITION OF SOLID WASTE

SEC. 304. Section 1004(27) (42 U.S.C. 6903(27)) of the Solid Waste Disposal Act is amended—

(1) by inserting "(A)" after "(27)";

(2) by striking out ", or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923)"; and

(3) by adding at the end thereof the following new subparagraph:

"(B) The term 'solid waste' does not include—

"(i) source, special nuclear, or byproduct materials as defined in section 11 of the Atomic Energy Act of 1954 (42 U.S.C. 2014), unless such materials are a part of any mixture or combination, if the other constituent part of such mixture or combination is a solid waste, within the meaning of subparagraph (A); or

"(ii) wastes at the time they are emplaced at a repository, as defined in section 2(18) of the Nuclear Waste Policy Act of 1982 (42 U.S.C. 10101(18)).".

APPLICABILITY OF AMENDMENTS

SEC. 305. This title and the amendments made thereby—

(1) are clarifying in nature with respect to the purpose stated in section 303; and

(2) shall not be construed as—

(A) altering the intent of Congress that the Solid Waste Disposal Act, as in effect prior to the amendments made by this title, applies to mixtures and combinations of solid wastes which contain radioactive material from the commercial nuclear industry; or

(B) affecting, modifying, or amending the Uranium Mill Tailings Radiation Control Act of 1978.

TITLE IV—RADIATION STUDY ADVISORY BOARD ACT OF 1987

SHORT TITLE

SEC. 401. This title may be cited as the "Radiation Study Advisory Board Act of 1987".

FINDINGS

SEC. 402. The Congress makes the following findings:

(1) After many years of study there remain unresolved questions about the health effects of radiation exposure from many sources, such as nuclear weapons manufacturing and testing, nuclear reactors, radioactive wastes, and the medical uses of nuclear materials.

(2) The epidemiology of radiation-caused injury and disease, including cancer, birth defects, and genetic damage, must be further examined and better understood.

(3) Public health authorities must be able to direct research efforts on the health effects of radiation so that effective means of protecting the public against dangerous exposure to radiation can be developed and achieved.

(4) The Secretary of Energy is primarily responsible for the production of nuclear materials and nuclear

weapons. In addition, the Secretary is required to study the health impact of activities of the Department of Energy. These dual responsibilities have the potential to create public concern as to the integrity and value of the health studies conducted by the Secretary.

ADVISORY BOARD

SEC. 403. (a)(1) To advise and assist the Secretary of Energy in conducting epidemiological studies of the effects of radiation under section 103 of the Energy Reorganization Act of 1974 (42 U.S.C. 5813), and any other law, the Secretary of Health and Human Services shall establish an advisory board known as the Radiation Research Review Board (hereafter referred to as the "Board").

(2)(A) The Board shall consist of 8 members appointed by the Secretary of Health and Human Services, 1 member appointed by the Secretary of Energy, and 2 members appointed by the Secretary of Labor. The Secretary of Health and Human Services shall make appointments to the Board so that the membership of the Board includes individuals who are expert in epidemiological studies of the health effects of radiation, and public health officials who are concerned with such health effects.

(B) The Secretary of Health and Human Services shall consult with the Director of the Centers of Disease Control, the Director of the National Cancer Institute, the Director of

the Center for Devices and Radiological Health, and others in formulating the membership of the Board.

(b)(1) Prior to any authorization or expenditure of funds in an amount greater than $100,000 by the Secretary of Energy for epidemiological studies of the health effects of radiation, the Secretary of Energy shall provide the Board with all requests for proposals concerning such studies.

(2) The Board shall review the proposals provided under paragraph (1) and promptly make appropriate recommendations to the Secretary of Energy in writing if the Board believes the proposal should be modified or not funded.

(3) The Secretary of Energy shall—

(A) implement the recommendations of the Board submitted pursuant to paragraph (2) prior to authorization or expenditure of any funds; or

(B) inform the Secretary of Health and Human Services and the Congress of his intention not to implement the Board's recommendation, specifying in detail the reasons for this decision.

(4) The Board shall annually review the studies conducted pursuant to this title, and advise the Secretary of Energy as to the suggested scope and direction of future studies needed.

(5) The Secretary of Energy, with the assistance of the Board, shall—

(A) insure that all studies undertaken under this title shall be subject to peer review; and

(B) promulgate guidelines for the provision of data from such studies to qualified researchers who are not associated with the Department of Energy in order to implement subparagraph (A).

(c) The Secretary of Health and Human Services shall provide such funds, facilities, and staff as are necessary for the Bo

United States General Accounting Office

GAO Testimony

For Release
on Delivery
Expected at
9:30 a.m. EST
Tuesday
June 17, 1987

Key Elements of Effective Independent Oversight of DOE's Nuclear Facilities

Statement of
J. Dexter Peach, Assistant Comptroller General
Resources, Community, and Economic Development
Division

Before the
Committee on Governmental Affairs
United States Senate

GAO/T-RCED-87-32

Mr. Chairman and members of the Committee:

We are pleased to be here today to provide our comments on the proposed Nuclear Protections and Safety Act of 1987 (S. 1085). Our testimony today will focus on Title I which establishes a Nuclear Safety Board to oversee DOE's nuclear facilities.

As you know, Mr. Chairman, GAO has a long history of supporting the need for independent oversight of various aspects of DOE's nuclear facilities. As I pointed out at this Committee's March 12 hearing, many of DOE's nuclear facilities are old, some are already operating beyond their expected life, and there are many unresolved concerns about the operational safety of and environmental problems at many of these facilities. The scope and importance of those concerns, coupled with the age of the facilities, caused us not only to reiterate our positions on the need for independent oversight, but also to recommend that DOE develop a strategy for its defense complex. This strategy would define the universe of problems DOE faces and present an action plan with timeframes and cost estimates for upgrading or building new facilities. Development of this strategy combined with effective oversight should help to assure the Congress and the public that these facilities, whether refurbished or new, are safe.

We believe that for any oversight approach to be effective in ensuring safety, it should have five key elements:

-- independence

-- technical expertise

-- ability to perform reviews of DOE facilities as needed

-- clear authority to require DOE to address the organization's findings and recommendations

-- a system to provide public access to the organization's findings and recommendations

Mr. Chairman, the proposed legislation creating a Nuclear Safety Board addresses each of these elements and therefore has the potential to be an effective mechanism for oversight of DOE's nuclear facilities. We also believe that these elements would serve as useful criteria in assessing any proposal that the Congress may consider.

Let me briefly describe our past positions on independent oversight, the types of problems we have identified in the safety area, and then describe the five key elements and how the Board meets those elements. In addition, we have some observations which we believe will assist the Committee in fine-tuning the bill.

GAO'S PAST WORK

We have a long history of recommending oversight of DOE operations. In a 1981 report, we pointed out that one of the basic, underlying causes of shortcomings in DOE's safety programs was its structure within DOE.[1] In that report, we argued for a separate office within DOE specifically set up to oversee safety matters within the department, and we stated that the office should report to the Under Secretary of Energy. Although DOE originally disagreed with our recommendation, in September 1985, it

[1]Better Oversight Needed for Safety and Health Activities at DOE's Nuclear Facilities (EMD-81-108, Aug. 4, 1981).

established the Office of the Assistant Secretary for Environment, Safety, and Health, that reports to the Under Secretary. We believe that DOE's action, in effect, adopted our 1981 recommendation.

Also in the 1981 report and again in a 1986 report, we highlighted the need for outside, independent reviews of safety analysis reports--important documents which are designed to show that DOE facilities are safely designed, constructed, and operated. In response to our 1986 report, DOE believed that its own Office of Assistant Secretary for Environment, Safety, and Health provides sufficient independent review.[2] At that time they stated that

> ". . . an additional level of oversight, over and above that already existing under the guidance of the Assistant Secretary for Environment, Safety, and Health, would not provide any additional assurances of the safe operations of DOE facilities. . ."

Our work on safety matters at DOE facilities over the past few years has not changed our position on the need for this oversight. On the contrary, our work has raised serious questions about both the safety of individual facilities and DOE operations as a whole. For example, during this Committee's March hearings, we disclosed that at DOE's Savannah River Plant, the reactors were potentially unable to cool the core in the event of a serious accident. Because of this safety concern, DOE's contractor at Savannah River

---

[2]Safety Analysis Reviews for DOE's Defense Facilities Can Be Improved (GAO/RCED-86-175, June 16, 1986.)

reduced the operating power of the reactors in the fall of 1986. After the hearings, DOE further reduced the operating power because the National Academy of Sciences, which at DOE's request is reviewing its reactors, felt the initial reduction was not sufficient to assure safety.

At that same hearing, we again highlighted the need for independent oversight as well as for DOE to develop a strategy for its defense complex. In addition, we recommended to the Secretary of Energy that DOE develop an overall strategic plan that sets forth the projected facility requirements for continued nuclear weapons production; a comprehensive picture of the environmental, safety, and health issues facing DOE; and solutions to resolve them. DOE officials have informally told us they agree with our recommendation.

We now understand that Secretary Herrington has endorsed the concept of outside independent oversight and that the department is now assessing various alternatives and will soon decide on the preferred approach.

KEY ELEMENTS OF EFFECTIVE
INDEPENDENT OVERSIGHT

As I indicated at the outset of my statement there are five elements that should be incorporated into any approach for independent oversight. Let me briefly discuss each of these elements and why they are important.

Independence means the organization must be structurally distinct and separate from DOE. This is important so that the

organization is visibly removed from DOE's influence in funding, staffing, and setting of safety agendas. Only in this way can conflicts between DOE's programmatic and safety goals be prevented. In the past, we have pointed out that such conflicts can and do occur. For example, during the 1970s, DOE considered closing the Fernald plant in Ohio. As a result, it did not make capital improvements and equipment became obsolete. In the early 1980s, DOE's production goals increased, putting a strain on the plant's resources. According to DOE's own documents, Fernald's management emphasized production over worker safety and health concerns.

The second element is technical capability. Any oversight organization must have the technical knowledge and capability to fully understand how DOE facilities are designed and operated and what the safety ramifications are of their operation. This is particularly important in overseeing the unique facilities and operations that DOE manages. Such expertise is necessary so that sound safety assessments are made and so that the organization is not too dependent on DOE's information for developing its own findings and recommendations. This technical expertise must exist not only at the top level where decisions are made, but at the staff level where detailed analytic work is performed. Sufficient staffing is also important so that the technical staff is not limited to cursory reviews.

The organization should have the ability to perform reviews of DOE facilities as needed. These reviews could range from an annual review to continual day-to-day oversight depending on the nature of

the issues being addressed. These reviews are important to maintain a working knowledge of DOE safety issues and to assess DOE's response to their recommendations. The organization's staff will also develop a better understanding of how DOE operates on a continuing basis rather than on a one-time or sporadic basis. Therefore, the organization could immediately respond to safety concerns. An important factor in the organization's ability to perform reviews when needed is clear access to DOE facilities and records. Without this access, timely and complete assessments may not be possible.

Next, the organization should have the clear authority to require DOE to address the organization's findings and recommendations. Such accountability is important so that DOE will seriously consider and act on these findings and recommendations. Without such influence the organization could easily become a DOE "consultant-type" organization, which could be a drawback. For example, DOE established the Roddis panel--an outside group of nuclear experts--to review the safety of its N-reactor in Washington State. This panel raised a number of fundamental issues regarding various safety aspects of the N-reactor and made recommendations to improve its operation. DOE was not required to act on the recommendations, but several months after receiving the panel's reports, DOE temporarily shut down the reactor ahead of schedule to upgrade safety systems. This upgrade included implementing some of the panel's recommendations, however, there is now concern that while DOE has begun to implement their

recommendations, all will not be complete prior to the planned restart of the reactor.

Finally, the findings and recommendations of the organization, if they are not classified, should be publicly available. This is important so that the Congress and the public can have a better understanding of the problems DOE faces and the risk in operating DOE nuclear facilities. Public disclosure of safety issues as they are identified will avoid piece-meal disclosures, as have happened in the past, and will also keep the Congress and the public fully informed about the condition of DOE's facilities.

In summary, we believe the five elements are important to the establishment of an independent safety oversight organization. If these elements are present, the organization becomes more credible and thus can help to ensure that DOE operations are safe.

NUCLEAR SAFETY BOARD MEETS THE KEY ELEMENTS OF EFFECTIVE INDEPENDENT OVERSIGHT

We believe that congressional debate concerning the proper vehicle for outside independent oversight should consider the five key elements we have just laid out. Accordingly, we have assessed the provisions of S. 1085 within the context of these elements and concluded that all five elements were clearly met. In that regard, let me briefly summarize why we believe the Safety Board meets each of these elements.

Independence

The Nuclear Safety Board is a new organization established by this legislation and is organizationally separate and distinct from

DOE. In this regard, the Board will be independent of DOE in obtaining funding and resources, and deciding on its own review agenda. Further, it will also have no operational responsibilities for DOE nuclear facilities. The Board members are appointed by the President, with the advice and consent of the Senate, and a Board member can only be removed by the President. Since there is no link or line of authority between DOE and the Board, it separates those making production decisions from those reviewing the safety aspects of the facilities. Therefore, the Board can take strong positions on the results of its reviews without considering operational needs. DOE would then be responsible for factoring in these needs in responding to any safety concerns raised by the Board.

Technical capability

The Nuclear Safety Board, as proposed in the legislation, is structured to obtain or acquire the necessary expertise to perform the functions established for the Board. For example, the proposed legislation states that the Board members must be respected experts in the field of nuclear safety. In addition, they must have "a demonstrated competence and knowledge relevant to the independent investigative and prescriptive functions of the Board." Also, the Board is authorized to hire a technical staff and to employ consultants if needed. Further, the proposed legislation would authorize the Advisory Committee on Reactor Safeguards, a technical advisory group to the Nuclear Regulatory Commission, to expand its

membership by up to five members and corresponding staff to assist the proposed Nuclear Safety Board in assessing DOE activities.

Ability to Perform Reviews of DOE Facilities as Needed

The proposed legislation requires the Board to issue an annual report which addresses for each DOE nuclear facility (1) the implementation of health and safety standards and (2) the quality and implementation of all DOE orders governing these facilities. The proposed legislation also provides sufficient flexibility for the Board to review any aspect of DOE's nuclear facilities at any time during the year. Over the years, the Board is intended to be a fixed entity which has acquired an institutional knowledge about the DOE facilities and is available to review those facilities as often as required. In order to perform these reviews as needed, the proposed legislation states that the Secretary of Energy and all contractors operating DOE nuclear facilities should fully cooperate with the Board and provide ready access to the facilities and information necessary to complete the Board's review.

Clear Authority to Require DOE to Address the Organization's Findings and Recommendations

DOE must take specific action on each of the Board's recommendations--either implementing it or notifying the Board and the Congress that the recommendation cannot be accomplished because (1) it is technically infeasible or (2) the President has exempted the facility from complying with the recommendation because it is in the "paramount interest of the United States to do so." The exemption is effective for up to 1 year, but is renewable upon

issuance of a new presidential determination. Therefore, DOE is forced to seriously consider each and every recommendation raised by the Board.

System to Provide for Public Access to the Organization's Findings and Recommendations

The legislation states that the Board's recommendations shall be sent to the Congress, and if not classified, to federal, state, and local government agencies and be made available to the public. This will allow for the people most affected by the operations of the facilities to obtain information on the safety of these facilities from an independent reviewer not affiliated with DOE.

POSSIBLE CLARIFICATIONS TO THE BILL

Overall, the Safety Board, as proposed by this legislation, meets the key elements, therefore, has the potential to effectively oversee DOE's nuclear activities. We do have the following observations which we believe will assist the Committee in fine-tuning the bill.

As I pointed out earlier, the Safety Analysis Reports are intended to show that DOE facilities are safely designed, constructed, and operated. These reports are prepared by the facility contractor operator and require approval by DOE. These reports establish a basis for both the operator and DOE to determine that its facility can operate safely and to conclude that operating the facility does not pose an unacceptable risk to public health and safety. However, we have found that these reports have not always done what they set out to do--some provided little or no

comparison to safety criteria, some used different approaches to analyze accidents, and some have not been approved. Given the importance of these documents, we have recommended that the reports on the facilities which involve significant nuclear hazards be reviewed by an outside group to provide independent assurance that these facilities are safely designed and operated. Therefore, while the bill is flexible in allowing for the Board to review these reports, we believe the review function should be highlighted as a specific responsibility of the Board. The Board would review the Safety Analysis Reports and make any recommendations public. DOE, in turn could accept and/or rebut the review. This function may become particularly important as DOE rebuilds its nuclear defense complex.

Another area that needs clarity is what health and safety standards the Board is to use in assessing the facilities. The bill tasks the Board with annually reviewing and evaluating the implementation of health and safety standards, as well as all applicable DOE orders at each DOE facility. In addition, a provision of the bill directs the National Academy of Sciences or some other group of experts to evaluate and interpret the differences between Nuclear Regulatory Commission regulations and DOE orders governing safety. However, there is no clear indication as to whether the Board should use the results of this analysis, establish its own standards, rely on DOE orders, or use existing NRC guidance for commercial nuclear facilities. We believe the

bill should more clearly define what standards the Board should apply.

KEY ELEMENTS SHOULD BE APPLIED
TO ANY OPTION CONSIDERED

Other bills which address oversight of DOE nuclear facilities are currently being debated in the Congress, and other approaches to independent oversight might be surfaced. We believe that any proposal that the Congress considers must be analyzed to determine if it meets the five key elements. It is possible that some other proposals may satisfy all of these elements. If that is the case, then other considerations such as cost and the intensity of oversight that Congress believes is needed would enter the debate.

As one example of other proposals, the Senate Energy and Natural Resources Committee has reported out S. 748, which among other things, establishes a new Inspector General for Nuclear Programs and establishes a panel to recommend a method of independent oversight to the Congress by January 1989. As I mentioned earlier, DOE is reconsidering its earlier position on independent oversight and is currently analyzing various options. Therefore, DOE and others may propose additional approaches as congressional debate continues.

In closing, Mr. Chairman, we commend you for consistently being at the forefront of this issue. We believe that S. 1085 clearly includes all five elements we believe important to establish an effective approach to independent oversight of DOE's nuclear facilities. As the Congress debates this and other

proposals which exist or may be introduced, we believe that each proposal should be assessed as to whether or not they meet the five elements outlined.

That concludes my testimony for today. We would be pleased to respond to any questions you or members of the Committee may have.

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

July 21, 1987

The Honorable John Glenn
Chairman, Committee on Governmental
Affairs
United States Senate

The Honorable William V. Roth
Ranking Minority Member
Committee on Governmental Affairs
United States Senate

On June 16, 1987, I testified before the Senate Committee on Governmental Affairs concerning the proposed Nuclear Protections and Safety Act of 1987 (S.1085), which the Committee is currently considering. Subsequent to that hearing we were asked to answer four questions for the record. Our responses to those questions are enclosed. If you would like to discuss these issues further or require additional information, please contact Keith O. Fultz on 275-1441.

J. Dexter Peach
Assistant Comptroller General

Enclosure

Responses to Questions Concerning the
Proposed Nuclear Protections and
Safety Act of 1987 (S.1085)

Question 1. Considering the responsibilities of the new board as outlined in the legislation, what type of resources, personnel and otherwise, does GAO believe would be required? Specifically, what would be the staffing needs of the new board? For example, would the new board require on-site inspectors? According to the written statement of John Ahearne, the new board would have to employ several hundred individuals. Do you agree with this assessment?

RESPONSE

As currently written, S. 1085 requires that, for each Department of Energy (DOE) nuclear facility, the Safety Board will annually

-- review and evaluate the implementation of health and safety standards, as well as all applicable DOE orders, and

-- review and assess the content and application of all DOE orders governing these facilities.

In addition, the proposed legislation states that the Board shall investigate any events at DOE nuclear facilities which the Board determines to be significant because of possible adverse effects on the health or safety of the public.

Resources will be required to carry out these responsibilities whether the Congress creates a new entity, like the proposed Board, or makes DOE oversight an added responsibility for an established organization such as the Nuclear Regulatory Commission (NRC). The specific staffing requirements will be dictated, however, by the level of intensity and scope that the Congress would want for this oversight. For example, to perform the annual review required by the proposed legislation, the Board with a few staff members could rely on already published DOE and contractor studies, request DOE staff to perform certain analyses, and base its annual findings and recommendations on this information. Another alternative is to have a team composed of Board staff (and possibly consultants) go to each facility and review DOE and contractor documents, discuss issues with contractor and DOE personnel, and write its report on more first-hand information. Under the first scenario, the Board itself, possibly without staff involvement, could review an event and make recommendations to DOE. In the case where the Board reviewed the event without DOE involvement, a larger Board staff would be needed.

We believe either organizational structure has the potential to satisfy the five key elements for effective independent

oversight of DOE nuclear facilities that Assistant Comptroller General J. Dexter Peach presented in testimony on June 16, 1987, before your committee. The first scenario organizational structure would provide less intense coverage and would have a more limited scope than the larger alternative organizational structure. The Board's staffing needs, therefore, would be dependent upon the level of intensity and scope of the oversight that the Congress would want this organization to have.

One approach to staffing the Board might be to start out with a "lean" organization (with the ability to hire consultants and utilize NRC's Advisory Committee on Reactor Safeguards and DOE staff) until the Board establishes its own baseline of information about the safety and health problems at DOE's nuclear facilities. In this early phase the Board could assess such things as its comfort level with the amount, quality, and content of information that it has obtained or been provided, the adequacy and thoroughness of coverage provided for key DOE facilities and activities, and the severity of the problems identified and the DOE actions planned or underway to address those problems. If the problems found are being adequately addressed and the Board determines that DOE has an effective internal safety oversight organization, then it might be reasonable for the Board to rely on this organization and its staff to provide the detailed analyses on which the Board could base its own findings and recommendations. On the other hand, if many problems are found or if the Board believed DOE's internal oversight could be strengthened, the Congress may want more "hands on" review and analyses by the Board and its staff. At that point, if the Board believed it would require a high level of intensity to assure that the facilities are safe, it could then report its increased staffing needs to the Congress. In summary, it is difficult to precisely determine appropriate Board staffing at this time. Therefore, the Congress may want to provide the Board some flexibility and allow it to gain some operating experience before deciding on the ultimate staffing needs.

In regard to onsite inspectors, we understand the Assistant Secretary for Environment, Safety, and Health is considering putting ES&H staff on-site at various DOE facilities who would be accountable to the Assistant Secretary (ES&H). If this occurs, the Board might want to assess the effectiveness of utilizing that staff as an information source before deciding whether there is a need to put its own staff on site.

Question 2. Considering the five criteria outlined in your testimony for effective oversight board, does GAO believe that the Nuclear Regulatory Commission would be a suitable organization to handle such oversight? If the NRC does not meet any of these five criteria, could you explain why and suggest changes to remedy the deficiency.

RESPONSE

Our testimony stated that for any oversight approach to be effective in ensuring safety, it should have five key elements:

-- independence

-- technical expertise

-- ability to perform reviews of DOE facilities as needed

-- clear authority to require DOE to address the organization's findings and recommendations

-- a system to provide public access to the organization's findings and recommendations

We believe that the NRC has the potential to meet all five elements. Certainly, organizationally NRC is independent from DOE; and NRC has a cadre of staff with highly technical nuclear backgrounds. NRC believes that its staff does not currently have the expertise to review the DOE facilities because of the differences between those facilities and the commercial nuclear facilities that NRC regulates. In addition, NRC argues that it would have to hire additional staff so that its regulatory responsibilities to the commercial nuclear industry would not be affected. While we agree with NRC that the DOE's facilities are unique, the NRC staff's extensive knowledge of the nuclear industry is an excellent base to aid them in quickly understanding DOE facility designs and operations.

In regard to the next three elements, NRC currently meets them in terms of their regulatory responsibilities for commercial nuclear reactors. If NRC were to be given oversight responsibility for DOE's nuclear facilities, it would require a legislative action, including specifying the NRC role and responsibility with regard to DOE and its facilities.

Since NRC does meet the five key elements as does the Safety Board, as we stated in our testimony, other factors must then be considered. For example, NRC may feel obligated to act in a full regulatory mode which Congress may not intend or may not think desirable. Under this regulatory framework, some of DOE's facilities may not satisfy NRC standards. NRC requires its reactors to meet all standards. Production from a DOE reactor, on the other hand, might be needed for national security reasons and therefore operation must continue even though the reactor does not meet NRC standards. If the latter happened, NRC could be accused of holding the commercial sector to tighter standards than DOE. Although NRC has not done a detailed cost estimate, an NRC official told us that if NRC had regulatory responsibilities similar to what they were given for the Clinch River Breeder Reactor, oversight of

each type of DOE facility might cost as much as $14 million per year for the first two years. Based on its estimate and given the various types of facilities (i.e. reactors, reprocessing, enrichment, etc.), the total estimate for such NRC oversight could be in the tens of millions of dollars.

Question 3. Assuming that an honest difference of opinion could exist over safety standards involving technical questions, and given the current language of S.1085, what if the DOE disagrees with the independent board's recommendations? Does GAO see a need for a third party arbiter to resolve disputes involving the independent board and DOE on technical issues? Are there any current areas of government that could serve as an example for resolution of this type of interagency dispute?

RESPONSE

The proposed legislation requires that DOE either implement the Board's recommendation or notify the Board and the Congress that the recommendation cannot be accomplished because (1) it is technically infeasible or (2) the President has exempted the facility from complying with the recommendation because it is in the "paramount interest of the United States to do so." The exemption can be renewed each year if the President makes a new determination. The President must report the exemptions, together with the specific rationale for granting them, to the Congress each year. The only exception is that exemptions granted because of the cost of implementing the recommendation cannot be renewed unless DOE specifically requests funding in its budget and the Congress does not appropriate the funds.

These proposed provisions, in effect, provide DOE with a third party to appeal to if DOE disagrees with a Board recommendation. The President and, at times, the Congress are in the position of making decisions about the validity of implementing a Board recommendation based on differing views by the Board and DOE. For example, if DOE disagrees with the Board they have the option of asking the President to grant an exemption. Since there is not criteria for granting exemptions other than it is in the "paramount interest of the United States to do so", if DOE makes a good case on a technical issue under disagreement, we see no reason why the President could not grant an exemption. Even in the case of a funding exemption where DOE must request funds the second year to implement a Board recommendation, DOE can still present to the Congress its views on the merits of funding the exemption projects.

If the Congress and/or the President needed additional information or another view on a particular issue, each could consult with others such as the National Academy of Sciences or another federal agency with expertise in the area(s) in question. Furthermore, there is nothing to preclude DOE or the Board from obtaining independent advice on an issue where there is an impasse

before either would formally forward or act on an activity where they differ. At this point no one can predict with certainty the frequency of DOE and Board disagreements nor how wide or significant their differences might be.

To provide some perspective on the frequency of use of third parties for resolving disputes we obtained some information about two other areas of government. For example, the National Security Council (NSC) acts as a third party when disputes over exports of nuclear material occur between DOE and an interagency group consisting of the Departments of State, Defense, and Commerce, the Nuclear Regulatory Commission, and the Arms Control and Disarmament Agency. Another third party example is the Occupational Safety and Health Review Commission. The Occupational Safety and Health Administration (OSHA) reviews the occupational safety and health activities of many types of organizations. If an organization disagrees with OSHA's findings concerning that organization, it may request a Commission review. According to a DOE official only one case has been referred to the NSC in the last five years and an OSHA official said that only two or three percent of their findings had been appealed to the Commission over the last few years.

In view of the above (1) possibilities for resolving disputes informally, (2) uncertainties associated with the need for a third party arbiter, and (3) potential infrequent need for an arbiter based on their limited use by others, we do not believe that a third party arbiter should be legislatively established at this time.

Question 4. What type of technical knowledge will staff members of the new board need to have? Do staff members of the Nuclear Regulatory Commission have this type of knowledge?

RESPONSE

There are a variety of disciplines and backgrounds that could be considered in staffing the Board including nuclear, electrical, and mechanical engineers; nuclear physicist; metallurgist; and environmental scientist. It is important to note, however, that this technical training does not necessarily provide the specific detailed knowledge of DOE's facilities. In fact, as stated in answer to Question 2, NRC believes that its staff does not currently have the expertise to review the DOE facilities because of the differences between those facilities and the commercial nuclear facilities that NRC regulates. In addition, NRC argues that it would have to hire additional staff so that its regulatory responsibilities to the commercial nuclear industry would not be affected. While we agree with NRC that the DOE's facilities are unique, the NRC staff is composed of the necessary technical disciplines and backgrounds so that expertise in DOE facility designs and operations can be quickly acquired.

Additional detailed comments by John F. Ahearne on S. 1085, "The Nuclear Protections and Safety Act of 1987," June 16, 1987, before the Senate Committee on Governmental Affairs:

Title I

Section 102 describes the Safety Board's mission as being quite broad: to review and evaluate the implementation of health and safety standards and all applicable DOE Orders, to conduct independent investigations, to review and assess all orders governing DOE nuclear facilities, and to recommend improvements to the DOE. These are substantial tasks, requiring a large number of highly competent staff. I do not believe the bill adequately funds this range of tasks.

Section 212

I believe (b)(1) and (b)(3) are inconsistent. The first one requires the Board to be composed of "respected experts in the field of nuclear safety" while the second requires that no member of the Board in the past two years shall have had any "significant financial relationship in any firm, company, corporation, or other business entity engaged in such areas in which the person should be an expert. This is not sensible, unless the bill intends to get university professors who have no consulting work. (Those persons probably would not be classed as experts.) Note that the NRC--probably suffering as a result--does not have any provision that the Commissioners be experts, and they have demonstrated over the years gross lack of expertise.

I can understand a conflict-of-interest provision covering actual government service. However, the two-year prohibition in the bill is not wise.

Section 212

(b)(3) refers to the exclusion with respect to activities "regulated by the Commission." I assume that means the Nuclear Regulatory Commission. Thus, I believe the bill does allow significant financial relationship to firms working for the Energy Department. This hardly is consistent with the theme of independence.

Section 212

(f): I assume that the "services" that "are necessary" includes housing of the organization somewhere.

Section 212

(g): As I will later note with respect to the section on OSHA, this title has no indication of what standards are to be applied by the Board. At a later point in the bill, there is mention of a one-time comparison of NRC regulations with respect to DOE orders. Perhaps the implication is that the Nuclear Safety Board is to use NRC regulations as standards. It is neither obvious that the Board should (since modifications would be necessary) nor that the bill requires such use.

Section 212

(g)(2)(A)(i) has a notable difference from the requirements of the Atomic Energy Act. The Atomic Energy Act requires the NRC to regulate the use of commercial nuclear power in such a way as to provide "adequate protection of the public health and safety." Section (g)(2)(A)(i) and

subsequent implementation sections apply the standard of no "possible adverse effects on the health or safety of the public." This is the zero risk concept. There is only one method to guarantee zero risk or no adverse effects, namely, to shut down all the facilities and permanently dispose of all the associated waste.

EPA has been hamstrung by Congress' inconsistent regulations. This bill would be another step in that same direction. If no adverse effects is the real goal, then the bill should be explicit and legislate that all these facilities should be closed.

I draw a distinction, which is significant, between providing adequate protection and ensuring zero risk.

Section 212

(g)(2)(A)(ii): The Board requests the Secretary of Energy to make the investigation in this subsection, but then the subsection goes on to state "whenever the Board concludes such an investigation...." It is not clear whether this means when the Board receives the investigation it has requested or whether this really refers back to the investigation in 2(a)(i).

Section 212

(g)(7)(D): The denial of access in (i) and (ii) seems to require an "and" rather than "or." As written, the subsection implies that the Secretary of Energy cannot deny access to information to someone who has been denied a security clearance, but for whom an argument has been made that there is a need for "access in connection with the duties of such person." There seems to be a missing link in the logic here, unless the

argument is that the DOE cannot be trusted in its security clearance procedures. If the DOE denies a clearance, there should not be access.

Section 212

(g)(8)(h)(1): The condition for not implementing the recommendations for action is that the action is not technically feasible. Combined with 212(g)(2)(A)(i) this act basically directs the Secretary of Energy to take all actions to ensure zero risk, which, as I argue earlier, means shutting everything down. It could slightly be modified to mean pouring in a vast sum of money--also unwise.

Section 212

(k): The act authorizes appropriations of $5 million per year, unadjusted for inflation I note. Has an estimate been made of what size staff $5 million would purchase? My estimate is that at most this would be 100 people, including support staff, secretaries, mail clerks, as well as investigators, reviewers, and board members. Probably 75 would be a more realistic number. Is this adequate? I do not believe it is. (I believe the tasks assigned to the Board will require several hundred people.)

Section 104

(3): The Secretary of Energy should also be required to fund the expansion of the ACRS and the corresponding staff. These are ongoing costs which must be incurred by the ACRS to be prepared to respond to the responsiblity laid on it. The NRC is not going to provide the funds for this (in fact, the NRC has been reducing the funding of the ACRS). As

subsection 3 is currently worded, I believe it could be interpreted as the DOE reimbursing the NRC (within whose budget the ACRS is funded) only after the fact for such studies done by the ACRS.

Section 105 I believe you mean the National Research Council (which is the organization that actually does the studies that come out under the newspaper description of the National Academy of Sciences or National Academy of Engineering.)

Section 105 includes the only mention of a possible set of standards, namely where the independent group is asked to evaluate and interpret the differences between NRC regulations and Department of Energy orders. Of course, the section does not imply such differences might be significant, nor does it really say that the NRC regulations should be used. This is merely an educational effort for the Board to understand the differences. This review is an important study, but it falls far short of providing the board with what standards does the Congress intend them to use. I believe this is a possible fatal flaw in this bill.

I note that Title II, Section 201 specifically mentions the standards that are to be used, endorsing the approach taken by OSHA and NIOSH.

Title III

Section 304 I am not familiar with the Solid Waste Disposal Act, RCRA. Therefore the following comment may be completely unfounded. However, a concern that I get in reading Subsection (3)(B), which is enforced by the section-by-section analysis comments, is that this section may be intended to place all of the NRC regulated industrial waste under EPA regulation.

Does this section refer to the non-DOE, NRC-regulated waste? My experience has been that the NRC is far more timely in developing applicable regulations than is EPA. If the non-DOE waste is included by this section, rather than improving the regulation of such waste, it is quite possible that this section would eliminate such regulation for years.

Title IV

This is a very confusing section. Neither Senator Glenn's floor comments, the section-by-section analysis, nor this title explains what the problem is that is attempted to be solved. Findings (1) and (2) of Section 402 are certainly true. Finding (3) is quite puzzling. Do public health authorities now not direct research efforts on health effects of radiation? If not, is this based upon a conscious decision by the Congress or by NIH not to study such effects? The BEIR reports do not really support this title. They certainly support the need for further study, but those reports do not support a possible inference that the studies that have been done have been significantly flawed because of a lack of appropriate guidance.

In addition, most of the nuclear use in the United States to which workers are exposed or to which the public might be exposed occurs in facilities or in use of materials regulated by the NRC, not by the Secretary of Energy. It is puzzling that there is no mention of the NRC, its activities, and no participation by the NRC in the Advisory Board.

Section 403 describes the purpose of the Board "as to advise and assist the Secretary of Energy." I disagree. The description that you have is to direct the Secretary of Energy's research.

A board of 11 members is extremely large. The requirement that every research grant of greater than $100,000 shall be revieved means that essentially any reasonable research grant has to be revieved. This Title is really an odd approach. The Board is required to review all of these proposals and promptly make appropriate recommendations. It is very difficult to do a competent review of a large number of proposals. Promptness is not the hallmark of such a review unless the Board is given a staff. (Which would raise the question of hov competent would they be? And, I note that the section-by-section analysis states that this Board will not result in increased cost to the Government.)

Is the intent that HHS should control all of the research on radiation effects done by DOE? If the concern is that there is not adequate research being done on health effects, why not put more money into HHS or directly into NIH? If the concern is that DOE does not do the right research, then shift the funds over to HHS.

It is possible that this title does not really address research related to occupational exposure to radiation in general, but rather only in those facilities run by the Department of Energy. This would be an explanation why the NRC facilities are not included, although certainly would not be a reason to expect that research on radiation exposure and DOE facilities should be fundamentally different than research on exposure in NRC regulated facilities. After all, a gamma, beta, or neutron interaction with a cell is going to be a function of the characteristic of the cell and the characteristics of the particle and not of what agency operates or regulates the facility producing the radiation.

If it is a concern that the DOE research is not of high quality, then I suggest some of the critiques in a recent report published by the National Research Council might be useful. "Revitalizing Nuclear Safety Research," (National Academy Press, December, 1986) addressed some of the mechanisms necessary to ensure high quality nuclear safety research. These include advisory groups to assist in choosing and developing a sound research program and also peer review mechanisms to ensure quality of product. I believe that the best form for advisory groups for research and for peer review is not to compose them solely of employees of other government agencies. I believe an advisory committee for appropriate research should include: representatives of NIH, because of their expert knowledge; the academic radiation research community; representatives of operating groups, such as the companies that run the DOE plants; and representatives of the health and safety organizations that are concerned about worker safety--these could include unions and some of the outside health and safety interest groups. Such an advisory committee could provide an overall review of the research program. The products should be reviewed by a peer review group that is primarily, if not solely, composed of competent researchers in the field. These should not be excluded from being people who receive funding from the government because, after all, much of the research is done that way, but could easily include radiation researchers from other countries where a substantial amount of radiation health effects research is being done.

ANSWERS TO QUESTIONS FROM SENATOR ROTH
John F. Ahearne
Resources for the Future

Responses to questions submitted following testimony on June 16, 1987 on S.1085.

Q1. You stated in your testimony that you believe the Nuclear Regulatory Commission could serve the functions of independent oversight as outlined in title 1. Could you be more specific?

A. Independent oversight requires a competent and objective agency outside the Department of Energy to reviev the facilities and operating practices of the Energy Department and conclude whether adequate safety is provided or changes must be made. This agency must be outside the direct control of the Energy Department. The Nuclear Regulatory Commission meets all of these conditions: it is competent, it is objective, and it is outside the control of the DOE. More than that, the Nuclear Regulatory Commission staff knows the Nuclear Regulatory Commission's regulations far better than any other organization could, as well as the bases of these regulations. Consequently, NRC staff could do the reviev required by section 105 far better than any other group that could be established for that purpose. Finally, because of its long history of examining and revieving not only commercial nuclear power but all other uses of nuclear technology, including those commercial facilities which provide material for defense programs, the Nuclear Regulatory Commission staff already understands what is meant by independent reviev.

I believe that the NRC would be far more willing to take a tough stand against the DOE on issues of safety than would a newly established independent organization. This willingness would be based upon the staff's

confidence in the validity of their conclusions, since the NRC staff has such a long history of investigating the dynamics of nuclear accidents and what are appropriate standards for design, construction, and operation of facilities in which radiation hazard is the primary concern. Similarly, the NRC senior people would have a greater tendency to be willing to take on the DOE because of this confidence in the staff.

Q2. It is often argued that the DOE nuclear facilities are inherently different from the commercial reactors regulated by the NRC, and thus the technical expertise of the NRC would not be helpful in conducting DOE oversight. How do you respond to this assessment? Are the environmental and worker safety concerns present at DOE facilities and commercial plants comparable?

A. The Nuclear Regulatory Commission has the technical competence to review design, construction, and operation of nuclear facilities. The NRC staff has handled the West Valley reprocessing plant, has been responsible for review and inspection of research reactors for many years, and has commented on the Energy Department's naval reactors program. Even at the present time, the Nuclear Regulatory Commission staff does not <u>design</u> commercial reactors but does examine what could go wrong with them and how to prevent that from occurring. I do not imply that the NRC could immediately handle all of Title I, but the Nuclear Regulatory Commission staff does have the embedded knowledge that would make it many times easier for the NRC staff to do Title I and train new technical people to handle Title I requirements than for any other agency established for this purpose. With respect to radiation protection standards, the NRC has developed what are called ALARA practices (as low as reasonably available) for any work in association with radiation hazards. These worker

protection standards and their implementation practices would be directly applicable to the Energy Department facilities.

Q3. The General Accounting Office outlined five criteria that should be considered when forming an independent oversight board. Do you agree with these criteria? If yes, do you believe that the Nuclear Regulatory commission meets the five criteria outlined by GAO? Are there any other government entities that meet these criteria?

A. Referring to the submitted statement of J. Dexter Peach of the GAO on June 17, 1987, the five key elements are independence, technical expertise, ability to perform reviews of DOE facilities as needed, clear authority to require DOE to address the organization's findings and recommendations, and a system to provide public access to the organization's findings and recommendations.

(1) Mr. Peach said that "independence means the organization must be structurally distinct and separate from DOE." In my answer to question No. 1, I have addressed the ability of the NRC to meet this requirement. I believe the NRC obviously would meet this GAO criterion.

(2) Technical expertise, or as Mr. Peach later defines it, technical capability: "have the technical knowledge and capability to fully understand how DOE facilities are designed and operated and what the safety ramifications are at their operation....This technical expertise must exist not only at the top level where decisions are made, but at the staff level where detailed analytic work is performed."

I have addressed this criterion in my answer to question No. 2. The Nuclear Regulatory Commission staff has the required competence at all levels. In many cases the staff members have spent their entire careers developing an understanding of complex nuclear facilities and operations

and, in particular, examining the safety ramifications of these facilities and their operation.

(3) The third criterion is defined by Mr. Peach as "the ability to perform reviews of DOE facilities as needed." This has two elements: clear access, and an adequate staff. I make the latter a necessary condition because without an adequate staff the organization would not have the ability to perform the reviews when needed. Satisfying these elements is a function of the legislation. Whether it is the NRC or another independent organization, guaranteed access to the DOE facilities must be established by legislation. In particular, establishing the need to know, which is a necessary but not sufficient condition to get a clearance, must be done by legislation. Thus, the NRC is in the same position as any other organization with respect to meeting this criterion, namely, legislation is required. Obtaining adequate staff also depends on the Congress, which must both authorize and appropriate funds to provide that staff. I believe, as I will outline later, that the staff required to perform this function would be less for the NRC than for any independent organization starting anev.

(4) Mr. Peach said, "the organization should have the clear authority to require DOE to address the organization's findings and recommendations. Such accountability is important so that DOE will seriously consider an act on these findings and recommendations." Legislation is required to meet this criterion. I agree it is an important criterion. As the bill is nov written, it requires the Secretary of Energy to respond to the reports of the oversight agency. This is a suitable method. However the other mechanisms detailed in the bill, for cut off unless the funding is in the President's budget, are really a question of Congressional-Executive relations. I would prefer three levels of enforcement options:

(a) The authority to require an immediate shutdown of the facility, in those cases of a severe safety hazard.

(b) A requirement to force the Energy Department to make modifications within a fixed number of days. Unless that is done, the facility must be shut down. The Secretary of Energy could ask the Congress for a Supplemental or for authority to switch funds from some other account to meet any large funding required to meet this requirement.

(c) The authority to require improvements over a longer time, in which case the independent oversight group would have to give a fixed time by which the modifications must be made. Then it would be up to the Secretary to propose and the Congress to authorize and appropriate the funds. If the time is reached at which point the modifications have not been done, then the facility should be shut down.

I would allow the President to override such sets of recommendations on national security grounds, with a written statement to that effect given to the Congress.

(5) Mr. Peach's fifth criterion is "the findings and recommendations of the organization, if they are not classified, should be publicly available." The Nuclear Regulatory Commission's findings are already publicly available. Therefore, meeting this criterion would follow from current practice. I would grant the DOE time to respond before such findings are made publicly available. The current bill has a 90-day period for the Secretary. I believe that is appropriate. The one exception would be in those cases where an immediate shutdown is required. That finding should be made publicly available immediately.

With respect to whether these criteria are appropriate, I believe they are. I knov of no existing organization that could meet these criteria (even the NRC requires legislation to meet (3) and (4)), and believe that the NRC could meet these criteria more readily than any new organization.

Q4. In your testimony, you stated that the new board would need to employ several hundred workers. What is the basis for this estimate? I would appreciate as much specificity as possible.

A. The principal basis for my estimate is my own judgment from my experience with the Nuclear Regulatory Commission. However, I will give you two approximate methods by which I estimated the appropriate number. You must recognize that a final estimate of number required for this type of an operation could not be made known until the organization was formed, had an opportunity to fully inspect and review the status of the DOE operating practices, and reviewed the design and construction records.

The Energy Department has four types of facilities: enrichment plants, reprocessing facilities, production facilities, and research reactors. To handle each type would require a branch of about 12 professionals to develop standards, review regulations and existing materials, and review proposed modifications. Therefore, this would require about 48 professionals. Reviewing new designs and construction facilities would need about 15 professionals. To insure true independence, any significant violations should be investigated by agency staff. This would require approximately 15 professionals. Finally, inspectors will be needed at the facilities, along with an inspection team to periodically review the facilities. These inspection needs would require a branch of about 12 per type of facility, for another 48. These four functions would

require about 130 professionals. Further, in order to handle enforcement actions and subsequent interactions with the Energy Department, the Defense Department, and the Congress will require some lawyers. There also will be a need for managers, for secretaries, for a mail room staff to handle the flow of paper, a policy review office to provide a small, independent devil's advocate within the operation, a personnel office, and a security office because the material to be handled frequently would be classified. This would easily bring the 130 up to at least 200. I have not included an office to handle development of research. The revised bill S.1085, that apparently will be in the markup, has added a phrase in the findings section 102(a)(2) that the independent group should suggest areas for needed research. The only way one can suggest areas for needed research is to be familiar with what research is currently existing. Consequently this would add an additional and different type of expert knowledge (but easily available within the NRC).

The second method of reaching approximately the same size is to note that the Nuclear Regulatory Commission has about 3,000 employees, at least one-half of whom work in regulation and inspection of power reactors. (The NRC also handles use of nuclear materials, waste disposal, and other aspects of the use of commercial nuclear energy.) Slightly more than 100 reactors are operating, which leads to approximately one-half of 3,000, or 1,500, covering approximately 100 reactors. This is about 15 people per reactor. If the Energy Department has about a dozen facilities, this factor would lead to a staff of 180. However, there is a substantial range of complexity amongst the DOE facilities that does not exist among those 100 plus reactors, so that the 180 should be increased by some factor, which gets to over 200 people being required.

I believe that many of the functions that are required, particularly the support functions, research knowledge, mail room, investigation, some legal work, and to some extent some of the inspection, could be absorbed within the existing NRC structure. However, I do believe that even if Title I is assigned to the NRC there will be some need for an increase in staff and a consequent increase in funds. I believe the increase for assignment to the NRC would be less than if it were given to an independent agency. However, the primary reason for assigning Title I to the NRC would be that there would be a much greater likelihood of the operation being effective than if a new, separate independent organization is formed. In addition, if embedded within the NRC, when unusual problems arise NRC staff could easily be called upon for short-term additional support. In addition, since the NRC does have a sizeable nuclear safety research program, they are in a better position to be able to review and recommend on further research needs.

Q5. Assuming that an honest difference of opinion could exist over safety standards involving technical questions, and given the current language of S.1085, what if the DOE disagrees with the independent board's recommendations? Do you see a need for a third party arbiter to resolve disputes involving the independent board and DOE on technical issues? Are there any current areas of government that could serve as an example for resolution of this type of interagency dispute?

A. The government has to operate on good faith and competence. The Energy Department has a mission to generate nuclear material for the Defense Department. It is fulfilling a defense mission. The NRC (or other agency) would have the mission to ensure such generation is done in a way to provide adequate protection for health and safety. The NRC (or other

agency) should not be able to challenge the rationale for the need for defense materials and force DOE to go to an arbiter to resolve whether the material is needed. Similarly, the DOE should not be able to force the oversight agency to an arbiter to resolve whether safety improvements are needed. However, if Congress believes there is a need for such a process, this third party arbiter should only be allowed to enter on major issues. If the President requests the money to meet the independent organization's recommendation but the Congress fails to appropriate the money, then the issue should be closed. The independent agency, however, could repeat its finding, forcing the process to cycle again. If the DOE and the independent agency disagree on minor issues, the independent agency should win, automatically. If the DOE objects on major issues, this can be raised to the President, who could then request the National Research Council to set up a panel to resolve the dispute.

Natural Resources
Defense Council

1350 New York Ave., N.W.
Washington, DC 20005
202 783-7800

TESTIMONY OF

DAN W. REICHER, ESQ.

OF THE

NATURAL RESOURCES DEFENSE COUNCIL

BEFORE THE

SENATE COMMITTEE ON GOVERNMENTAL AFFAIRS

CONCERNING

S. 1085

THE NUCLEAR PROTECTION AND SAFETY ACT

OF 1987

June 16, 1987

Washington, D.C.

100% Recycled Paper

New York Office:
122 East 42nd Street
New York, New York 10168
212 949-0049

Western Office:
25 Kearny Street
San Francisco, CA 94108
415 421-6561

New England Office:
850 Boston Post Road
Sudbury, MA 01776
617 443-6300

Toxic Substances
Information Line:
U.S.A: 1-800 648-NRDC
NYS: 212 687-6862

1

My name is Dan W. Reicher. I am an attorney with the NRDC's nuclear project. I hold a law degree from Stanford University and a bachelor's degree in biology from Dartmouth College. Prior to joining NRDC's staff in 1985, I was an Assistant Attorney General for environmental protection in the Commonwealth of Massachusetts, a staff member of the President's Commission on the Accident at Three Mile Island, and a legal assistant in the Hazardous Waste Section of the U.S. Department of Justice.

NRDC is a national environmental organization with over 70,000 members and a staff of 100 lawyers, scientists and resource specialists at offices in New York, Washington, and San Francisco. NRDC pursues a broad range of environmental, energy and defense issues. NRDC has long been concerned about the environmental effects of DOE's nuclear weapons production complex. Over the past 12 years, the NRDC Nuclear Project has won a series of lawsuits to enforce federal environmental laws at DOE facilities including Hanford, Washington; Oak Ridge, Tennessee; and the Savannah River Plant, South Carolina.

I am pleased to testify before the Committee on Governmental Affairs regarding S. 1085, "The Nuclear Protection and Safety Act of 1987." I have been asked by the Committee to focus in particular on Title III of the Act regarding mixed waste. I will also make some comments on Title I regarding establishment of an independent nuclear safety board to oversee the Department's weapons materials production activities.

Overall we strongly support Title III which mandates DOE compliance with RCRA for all mixed radioactive and hazardous wastes ("mixed wastes") at the Department's nuclear weapons facilities. We do not believe that DOE's recent acknowledgement of its RCRA obligations regarding mixed wastes insures compliance given the Department's long history of recalcitrance on this issue. Title I, which would establish a nuclear safety board to oversee DOE facilities, is more problematic. While we strongly support the concept of outside regulation of DOE facilities, we do not find that Title I creates a regulatory body with sufficient authority to oversee DOE operations properly. We believe the Nuclear Regulatory Commission could better carry out this mission.

TITLE III

Title III of S. 1085 responds to a three-year-old controversy over the applicability of the Resource Conservation and Recovery Act (RCRA) to hazardous chemical wastes mixed with radioactive materials ("mixed wastes") at Department of Energy (DOE) nuclear weapons production facilities. As the sole producer of nuclear weapons in the U.S., DOE operates approximately twenty-one different facilities, ranging from relatively small weapons component production plants to major multipurpose operations located on "reservations" covering more than 500 square miles. The primary operations of DOE's nuclear weapons complex include: producing plutonium and other

fissionable materials for nuclear weapons; enriching uranium; producing and testing nuclear weapons; conducting research and development; and processing, storing and disposing of radioactive and nonradioactive waste. For over 40 years, the Department's nuclear weapons facilities have been generating hazardous wastes through a variety of industrial processes. Each year, DOE facilities generate millions of gallons of solvents, caustics, acids, heavy metals, and nitrates; much of this waste contains radioactive materials.

Over the years DOE has disposed of a large proportion of these mixed wastes through direct discharge to unlined pits, ponds and lagoons. Where the wastes contain high levels of radioactivity they have usually been stored in metal tanks. Solid mixed and hazardous wastes have generally been placed into trenches or "burial grounds."

These disposal practices have resulted in significant on-site and off-site ground-water contamination at a number of DOE facilities. A September 1986 Government Accounting Office study prepared at the request of Senator Glenn (D-OH) found that eight of nine DOE facilities studied have ground water contaminated with radioactive and/or hazardous substances to high levels. GAO/RCED-86-192. At the Savannah River Plant toxic solvents have reached the deep Tuscaloosa aquifer, a major water source in the southeastern United States. At the Hanford Reservation, almost 500,000 gallons of mixed wastes with high levels of radioactivity have leaked from tanks to the underlying soil.

Cleanup of the waste disposal problems at DOE facilities will likely cost several tens of billions of dollars. By comparison, about $9 billion has been authorized over five years for the entire federal Superfund program for cleanup of commercial hazardous waste sites.

The Mixed Waste Problem

DOE had essentially complete discretion over the management and disposal of its hazardous and mixed wastes until 1976 when Congress enacted the Resource Conservation and Recovery Act. 42 U.S.C. § 6901 et seq. Until the passage of RCRA, DOE managed the hazardous and mixed wastes at its facilities in virtually the same manner as it managed purely radioactive wastes, i.e. under the general authority of the Atomic Energy Act (AEA). However, the AEA and associated regulations gave DOE almost no guidance concerning the proper handling and disposal of chemical and mixed wastes.

RCRA established a comprehensive program for managing hazardous waste from "cradle to grave." Moreover, under RCRA section 6001, federal agencies must comply with all federal, state, regional, and local requirements respecting hazardous waste disposal. Despite the clear intent of section 6001, DOE has resisted full implementation of RCRA at its weapons production facilities. DOE initially claimed complete exemption from RCRA and its regulations. DOE argued, among other things, that the AEA precludes EPA or state regulation of hazardous and

mixed wastes under RCRA at the Department's facilities, and also that application of RCRA would jeopardize national security.

DOE's claims were rejected in a federal case brought by the Legal Environmental Assistance Foundation (LEAF) and NRDC against the Department for RCRA violations at DOE's Y-12 Plant in Oak Ridge, Tennessee. LEAF v. Hodel, 586 F. Supp. 1163 (E.D. Tenn., 1984). The court found RCRA applicable to hazardous waste disposal at the Y-12 facility and ordered DOE to file for RCRA permits immediately.

DOE did not appeal the LEAF decision and indicated that it would apply the rule established by the case to all of its AEA facilities. However, immediately following the decision, DOE asserted that while non-radioactive hazardous wastes were covered by RCRA, mixed wastes were not. Although DOE later agreed with EPA that its mixed waste is subject to RCRA, the Department, in November 1985, proposed a rule that would redefine much of the DOE mixed waste as "byproduct material" under the AEA which is, by definition, exempt from RCRA. 50 Fed. Reg. 45736 (November 1, 1985). The effect of the rule would have been to exclude much of the DOE mixed waste from RCRA regulation. The proposed rule was heavily criticized by states and environmental organizations. Moreover, in the fall of 1986, 70 members of Congress, led by Congressman Synar (D-OK), signed a letter to DOE Secretary Herrington calling for its withdrawal.

In November 1986, DOE proposed to EPA a more limited exemption from RCRA for high-level and transuranic mixed wastes.

EPA's Mixed Energy Work Study (MEWS) task force was formed in response. DOE did not get strong support for its proposal in the task force's March 1987 report. Lacking EPA's backing, and with the inevitability of mixed waste legislation in Congress and/or litigation by states and environmental groups, DOE, on May 1, 1987, issued an "interpretive rule" acknowledging that all DOE radioactive waste which is hazardous under RCRA is subject to regulation under both RCRA and the AEA. 52 Fed. Reg. 1593 (May 1, 1987).

DOE's acknowledgement of its obligations does not change the legacy of the past three years. DOE's recalcitrance regarding mixed waste has prevented EPA and authorized states from enforcing RCRA fully at the Department's facilities. As a result, large quantities of mixed wastes containing highly toxic chemicals are not being treated, stored, and disposed under the important management system established by RCRA. For example, in 1986 the GAO found that "Hanford was seriously out of compliance with RCRA." GAO/RCED-87-30. GAO determined that DOE has not only failed to meet ground water monitoring requirements at the Hanford waste sites on its RCRA permit application, but it has not yet even identified all waste streams that should be permitted. Id. This situation at Hanford and other facilities has prompted states and environmental organizations to pursue administrative and judicial enforcement actions at a number of DOE facilities. For example, NRDC, the State of South Carolina, and three citizens groups are currently engaged in litigation to

force DOE to comply with RCRA at a number of hazardous waste sites at the Savannah River Plant in South Carolina. Although there has been some headway made as a result of such actions, DOE is still seriously out of compliance with RCRA at a number of its facilities.

Title III Is Necessary Despite DOE's Recent Acknowledgement of Its RCRA Obligations

The critical question is what effect, if any, should DOE's recent acknowledgement of the applicability of RCRA to all of its mixed wastes have on Title III of S. 1085. Our view is that Title III remains necessary in order to ensure DOE compliance with RCRA. First, as a matter of law we do not believe that DOE has the authority to determine the applicability of RCRA to its wastes. DOE has promulgated an "interpretive rule" which purports to determine the applicability of RCRA to the Department's mixed wastes. While we agree with the result of the rule, it is EPA and not DOE which Congress has authorized to determine administratively whether or not a given waste stream is subject to RCRA, independent of whatever other laws might regulate the wastes or components thereof.

DOE's lack of authority leads to my second point, which is that without binding legislation DOE could retract its recent acknowledgement of its RCRA obligations thereby frustrating EPA and state authority once again. Implementation of RCRA will not be an easy or inexpensive matter at some of DOE's facilities given the massive waste problems that the Department has created

over the past 40 years. When EPA, states and environmental organizations begin to enforce RCRA fully against DOE, especially the 1984 amendments to the law, the Department may seek once again to avoid its obligations just as it has done for the past several years. In such a situation, perhaps under a new administration or DOE Secretary, there will be absolutely nothing to prevent the Department from issuing yet another Federal Register notice purporting to exclude certain wastes or processes from RCRA regulation. This could tie up RCRA enforcement in the same manner it has done since 1984. States and environmental groups could pursue the issue in court but this is a slow process with uncertain results.

In our view it would be far better to lay the mixed waste issue to rest once and for all by enacting Title III. Title III clearly and simply spells out that all mixed wastes are subject to RCRA. It achieves this by amending the definition of "solid waste" under section 1004(27). This is the operative definition in Title III because "hazardous waste," as defined under RCRA Section 1004(5) is a subset of "solid waste" as defined in Section 1004(27). In other words, in order to be regulated under RCRA as a hazardous waste a material must first meet the definition of "solid waste."

Currently, the term "solid waste" under RCRA expressly excludes radioactive materials governed under the Atomic Energy Act, i.e. "source, special nuclear and byproduct materials." 42 U.S.C. § 2014(e),(z),(aa). Title III would retain this exclusion

in section 1004(27) except where these radioactive materials are mixed with a "solid waste" as defined in RCRA section 1004(27). If this mixture or combination, despite its radioactivity, meets RCRA's definition of hazardous waste, then the waste would be subject to RCRA.[1]

Although Title III vests authority in EPA and authorized states over mixed wastes, it does not remove AEA jurisdiction over these substances. Under the provision, EPA and authorized states would regulate the non-radioactive hazardous constituents and DOE the radioactive constituents of mixed wastes. This result flows from RCRA section 1006 which states that RCRA shall not apply to any substance or activity regulated under the AEA except to the extent not inconsistent with that law. As a clarifying amendment to RCRA, Title III does not alter AEA authority over the radioactive constituents of mixed wastes.

---

[1] Title III also clarifies that the term "solid waste" does not include high-level radioactive wastes at the time they are transported to and emplaced in a repository, as that term is defined in the Nuclear Waste Policy Act, 42 U.S.C. § 10101(18). This provision is intended to exclude from RCRA regulation the transport of high-level nuclear waste and its emplacement in a geologic repository developed pursuant to the NWPA. The provision is not, however, intended to limit RCRA regulation of high-level nuclear wastes containing RCRA hazardous materials prior to the actual point in time when such wastes are transported to and emplaced in a repository. Thus, where high-level wastes in a mixture or in combination with RCRA hazardous wastes are generated, treated or stored, prior to transportation to or emplacement in a repository, such wastes are subject to RCRA. Moreover, if such wastes are disposed of in any manner other than in a geologic repository, developed pursuant to the NWPA, such wastes remain subject to RCRA.

Title III, then, sets in stone the concurrent regulatory authority which DOE has recently acknowledged it is willing to accept. DOE should thus have no objection to Title III. If the Department does resist enactment of the provision, this indicates that DOE may not be fully and permanently committed to compliance with RCRA for all of its mixed wastes. I urge the Committee to explore carefully any DOE reluctance toward Title III.

Although Title III resolves a jurisdictional battle over RCRA's applicability to DOE facilities, it does not insure successful enforcement of the law. There are a number of areas where EPA and state implementation of RCRA could falter. Some of these could be addressed in S.1085 or other legislation.

First, DOE may attempt to exempt certain disposal and cleanup practices from RCRA arguing that there is an inconsistency between RCRA and the AEA. Under RCRA § 1006(a), where there is an irreconcilable conflict between the requirements of the two laws, then the AEA would prevail. In its May 1 announcement DOE "emphasize[d] the importance of section 1006(a) in resolving any particular inconsistency that may occur between...RCRA and...the AEA....While DOE does not anticipate that adoption of today's final rule will lead to frequent cases of inconsistency, section 1006(a) provides critical assurance that the implementation of the final rule will present no impediment to the maintenance of protection from radiological hazards as well as DOE's accomplishment of its other statutory

responsibilities under the AEA." 52 Fed. Reg. at 15940 (emphasis added).

Buried in this seemingly benign statement may be the seeds of yet another DOE strategy to avoid full compliance with RCRA. DOE may argue that there are irreconcilable conflicts between the AEA and RCRA precluding application of RCRA to certain waste streams or facilities. We are very concerned about this potential strategy. In the several years that the mixed waste controversy has raged we have not been apprised of a single example of an irreconcilable conflict between the two laws. There is enough flexibility in RCRA to accommodate the radiation protection goals of the AEA and in the AEA to accommodate the goals of RCRA. However, if DOE can make such a case, and if EPA or an authorized state agrees, then under section 1006(a) RCRA should yield.

Even more troubling is DOE's reference to its "other statutory responsibilities under the AEA" as a basis for avoiding RCRA. Id. We are concerned that under tight budget conditions or in other circumstances DOE will argue that compliance with RCRA at certain sites or facilities is inconsistent with the Department's responsibilities under the AEA to provide nuclear weapons to the Department of Defense and therefore RCRA must yield. I believe that allowing DOE to escape RCRA under this rationale, as the Department attempted to do in the LEAF case, would be a serious mistake. As Senator Glenn stated in introducing S. 1085 "we cannot afford to risk permanent harm to

our citizens and our land in the name of national security." We urge the Committee to add a provision to Title III specifying that DOE will be exempted from RCRA requirements under the inconsistency provision of Section 1006(a) only where application of RCRA would necessarily increase the radiation hazards of mixed wastes.

Second, as just noted, the high costs of RCRA compliance could thwart enforcement of Title III. Waste cleanup costs at Hanford and the Savannah River Plant alone could run as high as $25-35 billion based on DOE estimates. Under the current Congressional appropriations process, there is not a reliable source of funding which DOE, EPA and the states can count on in developing long-term cleanup plans. I would suggest that the Committee consider legislation creating a more reliable funding mechanism for DOE facility cleanup. Congressman Sid Morrison (R-WA) last week introduced H.R. 2625 mandating that 0.5% of the entire DOD budget (excluding chemical demilitarization) and the DOE AEA activities budget (excluding defense waste transportation and management) be spent on waste cleanup. Overall, we believe this legislation is a step in the right direction. However, we object to the fact that under the bill an increase in available cleanup funds is tied to an increase in defense spending. This would create unacceptable conflicts for many members of Congress.

Third, DOE, with the support of the Department of Justice, has asserted that it is not subject to enforceable administrative orders or penalties for RCRA violations issued by EPA or the

states. This puts a serious crimp in efforts to enforce RCRA against an often recalcitrant DOE. I suggest the Committee consider legislation clarifying Congress' intent, under RCRA Sections 6001 and 3008, that DOE is subject to enforceable administrative orders and penalties issued by EPA and authorized states in the same manner and to the same extent as private industry.

TITLE I

I would now like to turn briefly to the larger question of oversight of DOE facilities. DOE's self-regulation of its facilities, under a system of internal orders, is at the root of many of the problems we see today at the Department's facilities. Under the AEA, DOE has authority over radiation hazards posed by activities such as reactor operation and radioactive waste disposal. Unlike the commercial nuclear industry, DOE is not subject to outside regulation by the Nuclear Regulatory Commission.

This situation has led to reactor safety risks which exceed those of commercial reactors. For example, DOE's N-Reactor at Hanford, Washington, which is the most similar of U.S. facilities to the stricken Chernobyl reactor, lacks the radiation containment dome found on all U.S. commercial reactors. This and other problems led two of DOE's own consultants to recommend that the N-Reactor be permanently shutdown. DOE shut the reactor down last January for modifications but intends to restart it this

summer. DOE's Savannah River Plant reactors are all running at half power after revelations of safety problems were made by the National Academy of Sciences.

In the radioactive waste disposal area DOE has clung to disposal practices which are either outlawed or outmoded in the private sector. For example, radioactive primary coolant at the N-Reactor is discharged both routinely, and in the case of accidents, to unlined pits in the ground. The contents of these pits are allowed to seep into the Columbia River. In 1985 the average concentration of strontium-90 in riverbank springs exceeded the EPA drinking water standard by over 560 times.

Title I Although A Step in the Right Direction Is Inadequate

Title I of S. 1085 is an attempt to eliminate this unregulated state of affairs at DOE facilities. Title I creates a Nuclear Safety Board which will evaluate the implementation of health and safety standards at DOE facilities and investigate all "events" which are defined in S. 1085 as actions or failures to act which could have a potentially adverse effect on public health and safety.

The Nuclear Safety Board, although a step in the right direction, is inadequate to address the need for outside oversight of DOE facilities. Under Title I, DOE would continue to operate its facilities under the authority of its internal Orders subject only to occasional reviews, recommendations and reports by the Board. DOE would not be subject to regulations

developed by an outside agency after opportunity for public comment. Moreover, states and citizens would have no formal legal mechanisms to have violations addressed by the Board. Nor would there be a cadre of independent inspectors to insure compliance with the regulations. This last point was raised by a former top nuclear engineer at the Savannah River Plant (SRP) in a recent letter to the Committee about Title I. Mr. Fred Christensen stated:

> [W]e remain most concerned that the proposed Department of Energy Nuclear Safety Board appears to be without qualified, resident, on-site inspectors at reactor sites...[w]e feel that such a Board would be as blind as was the ACRS [Advisory Committee on Reactor Safeguard which oversaw DOE facilities under the old Atomic Energy Commission]....
>
> If reactor operators are not well trained, if safety systems do not function as intended, if industrial fires could disable the confinement system, who, pray tell, is going to identify and report these problems to the Board? Surely not local management that has condoned the problems for thirty years, surely not QA [Quality Assurance] groups that report to local management. Such problems may or may not exist, but pray tell, how will the Board know? And that is the problem: The Board cannot know without qualified independent eyes on the job.
>
> We feel that Senator Glenn is exactly on target in his comments...about institutional problems at government reactors. But we most respectfully remind you that these problems had their genesis and growth during periods when the ACRS had oversight at SRP, and the main flaw with the ACRS system was lack of on-sight inspection.

By way of analogy, the National Transportation Safety Board (NTSB), upon which the Nuclear Safety Board is modeled,

investigates and makes recommendations about transportation accidents. Day-to-day oversight of the airlines industry, however, is the role of the Federal Aviation Administration (FAA). The safety of U.S. air travel depends upon both of these functions. While the Nuclear Safety Board would function similarly to the NTSB, it would not have a comprehensive, day-to-day regulatory function akin to that of the FAA.

NRC Should Oversee DOE Facilities

Any agency created to oversee DOE facilities must have authority to develop and administer a full regulatory program which includes formal regulations, independent on-site inspectors to oversee their implementation, and a mechanism for public intervention to assure that violations are addressed. Such an agency already exists in the Nuclear Regulatory Commission. In our view NRC should be given authority over DOE facilities. Any new DOE facility should be licensed and operated under the same safety standards as commercial nuclear power plants, although modifications of the standards may be necessary, on a case-by-case basis, to reflect the unique operations of some of the DOE facilities. NRC should also hold existing DOE facilities to commercial standards. Where an existing DOE plant or operation is unable to meet certain standards, NRC should develop a reasonable timetable for either bringing the unit into compliance or phasing it out.

We recognize the shortcomings of the NRC, many of which have been highlighted by this committee in recent months. We are confident, however, that these problems can be corrected. Overall we believe a reconstituted NRC, with its comprehensive regulatory structure and corps of inspectors, is superior to the Nuclear Safety Board, with its limited oversight function, lack of on-site inspectors and absence of a mechanism for formal public intervention. We encourage the Committee to rethink Title I of S. 1085.

In summary, we strongly support enactment of Title III of S. 1085. We urge the Committee to consider the additions to the legislation suggested in this testimony in order to ensure DOE compliance with RCRA. We are less supportive of Title I although we agree with its objective of outside oversight of DOE facilities. We encourage the Committee to consider NRC regulation of DOE nuclear weapons facilities as an alternative.

Natural Resources
Defense Council

1350 New York Ave., N.W.
Washington, DC 20005
202 783-7800

ANSWERS TO QUESTIONS POSED BY SENATOR ROTH
RE: S. 1085
THE NUCLEAR PROTECTION AND SAFETY ACT OF 1987

BY DAN W. REICHER, ATTORNEY, NUCLEAR PROJECT
NATURAL RESOURCES DEFENSE COUNCIL

1. You stated in your testimony that you believe the Nuclear Regulatory Commission could serve the functions of independent oversight as outlined in Title I. Specifically, you mentioned the analogy of the National Transportation Safety Board. Would you expand upon these comments.

We support the overall concept of outside independent regulation of DOE facilities envisioned in S. 1085. We believe, however, that the Nuclear Regulatory Commission (NRC) could better serve this function than the Nuclear Safety Board ("Board") created under Title I. First, the NRC would apply safety standards developed independently of DOE after opportunity for public comment. Under Title I, in contrast, DOE would continue to operate its facilities under the authority of its internal Orders. These Orders do not insure a level of safety equivalent to that required of commercial nuclear facilities, nor are they the result of a notice-and-comment rulemaking process. Under Title I, the Orders would be subject only to occasional reviews and recommendations by the Board. Moreover, under Title I there are a number of ways by which DOE can avoid implementing the Board's recommendations.

Second, NRC would provide continuing day-to-day oversight including resident on-site inspectors. NRC currently has full-time on-site inspectors at each commercial nuclear power plant. These inspectors insure that problems at a facility are identified immediately and complete information is passed on to the Commission so that swift and proper responses are made. As honest and safety-conscious as DOE or its contractors may be, inevitable conflicts between safety and production can thwart the free flow of information. Under Title I the Board would rely on DOE and its contractors for much critical information. As a former top engineer at DOE's Savannah River Plant stated:

> If reactor operators are not well trained, if safety systems do not function as intended, if industrial fires could disable the

> confinement system, who, pray tell, is going to identify and report these problems to the Board? Surely not local management that has condoned the problems for thirty years, surely not QA [Quality Assurance] groups that report to local management. Such problems may or may not exist, but pray tell, how will the Board know: And that is the problem: The Board cannot know without qualified independent eyes on the job.

The role of the National Transportation Safety Board (NTSB) highlights this problem with the Nuclear Safety Board under Title I. The NTSB investigates and makes recommendations about transportation accidents. However, day-to-day oversight of, for example, the airlines industry is the role of the Federal Aviation Administration (FAA). While the Nuclear Safety Board would function similarly to the NTSB, it would not have a comprehensive, day-to-day regulatory function akin to that of the FAA.

Third, NRC would provide a mechanism for formal public participation in the oversight of DOE facilities. Under existing NRC procedures the public can formally petition the Commission to review a safety problem at a nuclear facility. As a result, the Commission has been compelled to consider serious safety problems which might have otherwise been neglected. Under Title I the Board simply "may evaluate" information from the public. There is no requirement that the Board respond in any way to the information presented.

2. The General Accounting Office outlined five criteria that should be considered when forming an independent oversight board. Do you agree with these criteria? If yes, do you believe that the Nuclear Regulatory Commission meets the five criteria outlined by GAO?

The GAO outlined the following five elements which any DOE oversight body should have in order to be effective: (a) independence; (b) technical expertise; (c) ability to perform reviews of DOE facilities as needed; (d) clear authority to require DOE to address the organization's findings and recommendations; and (e) a system to provide public access to the organization's findings and recommendations. We agree with criteria a, b, and c. As to criterion d, we would not only require DOE to address an oversight body's findings and recommendations, but also to implement them. As to criterion e, we would provide public access not only to the oversight body's findings and recommendations, but also to its formal deliberations subject, of course, to national security limitations. The NRC meets each of the GAO criteria as well as

our additions. We believe the Nuclear Safety Board would not meet criteria a, c, and d as presented by GAO nor the addition we would make to criterion e. The Board would not be independent, relying as it would on DOE's internal Orders for its regulatory authority, and DOE and contractor personnel for much of its information and investigatory capabilities. Lacking a day-to-day on-site presence, the Board would have insufficient capability to perform reviews of DOE facilities as needed. Under Title I as written the Board does not have authority to require DOE to address its findings and implement its recommendations concerning "events" at DOE facilities with adverse effects on public health and safety. Finally, the public would have no access to the Board's deliberations either as advocates or observers.

3. Considering the responsibilities of the new board as outlined in the legislation, what type of resources, personnel and otherwise, do you believe would be required? Specifically, what would be the staffing needs of the new board? For example, would the new board require on-site inspectors? According to the written statement of John Ahearne, the new board would have to employ several hundred individuals. Do you agree with this assessment?

We believe substantial resources and personnel would be needed to oversee DOE facilities adequately. We do not have sufficient information to predict specific staffing needs. We would note, however, that the NRC has over 2000 employees involved in the oversight of nuclear power plants and nuclear waste disposal, excluding research. This number includes over 650 employees involved with reactor regulation, almost 350 involved with radioactive waste and 1100 involved in enforcement. DOE has approximately 21 major facilities with literally hundreds of separate nuclear operations. Given the magnitude of this complex we believe NRC Commissioner Ahearne's estimate is realistic.

4. Assuming that a honest difference of opinion could exist over safety standards involving a technical question, and given the current language of S. 1085, what if the DOE disagrees with the independent board's recommendations? Do you see a need for a third party arbiter to resolve disputes involving the independent board and DOE on technical issues? Are there any current areas of government that could serve as an example for resolution of this type interagency dispute?

Under Title I DOE is free to ignore recommendations which it finds to be technically infeasible or, with the President's approval, too expensive. If there is a technical dispute over

the feasibility of a recommendation, DOE would have the last word under Title I. We would not support resort to a third party arbiter to resolve such disputes. Rather, any oversight body created should have the final authority in technical disputes. NRC possesses such authority with respect to safety problems at nuclear power plants. Lacking such authority an oversight body would be little more than an advisory committee.

5. Some have suggested that if the NRC was given independent oversight responsibility for DOE facilities, this would be a return to the pre-1974 government policy of nuclear facility oversight? Do you agree with this assessment?

The old Atomic Energy Commission (AEC) was involved with both the development and regulation of commercial and military uses of the atom. Recognizing the inherent conflict of interest in this structure, Congress split up the AEC into the NRC and the Energy Research and Development Administration (ERDA) in 1974. NRC was charged with regulating the safety of the commercial nuclear industry. ERDA, which later became DOE, was charged with, among other things, producing nuclear weapons. No provision was made, however, for independent oversight of the safety of DOE's nuclear weapons production complex. In our view NRC should have been given this authority in 1974. Giving NRC this authority today would in no way represent a return to the pre-1974 regulatory structure inasmuch as the Commission would have only regulatory responsibilities.

STATEMENT OF
J. WINSTON PORTER
ASSISTANT ADMINISTRATOR
FOR SOLID WASTE AND EMERGENCY RESPONSE
U.S ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
COMMITTEE ON GOVERNMENTAL AFFAIRS
U.S. SENATE

JUNE 16, 1987

Mr. Chairman and members of the Committee, I am J. Winston Porter, Assistant Administrator for Solid Waste and Emergency Response. I am accompanied by Sheldon Meyers, Director of the Office of Radiation Programs, Lisa Friedman, Associate General Counsel for Solid Waste and Emergency Response, and Bruce Weddle, Director, Permits and State Program Divison, of the Office of Solid Waste. I appreciate the opportunity to be here this morning to discuss with you the issues involving the regulation of mixed hazardous and radioactive waste, and Title III of S. 1085, Chairman Glenn's bill to clarify the Federal authorities in this area.

Radioactive mixed wastes are wastes that contain both hazardous waste subject to RCRA and radioactive waste subject to the Atomic Energy Act (AEA). Whereas the AEA establishes a comprehensive framework for licensing and regulating the use of radioactive material, RCRA establishes a broad regulatory scheme governing the generation, transportation, and management of hazardous wastes. Section 6001 of RCRA subjects all Federal facilities and their activities to Federal, State, interstate and local requirements concerning waste management practices. Under Section 1006(a), RCRA does not apply to activities or

substances covered by the AEA except to the extent that application of RCRA would not be inconsistent with the AEA. Thus, RCRA regulations would not apply if they conflicted with AEA requirements.

Differences of opinion that have arisen in the past over issues involving the applicability of RCRA to wastes at DOE facilities have now been resolved. For example, the question of which wastes are encompassed by the term "byproduct material" was unresolved for some time. However, the Department of Energy on May 1 adopted an interpretation of "byproduct material" which recognizes the applicability of RCRA to the non-radioactive hazardous constituents of radioactive mixed wastes at DOE facilities.

Similarly, EPA's interpretation of current law is that RCRA applies to the solid waste component of radioactive mixed waste, but not specifically to the radioactive component of the waste. This interpretation has been used in developing regulations for commercial mixed wastes generated by facilities licensed by the Nuclear Regulatory Commission (NRC).

It should not be overlooked that the EPA already has AEA authority (as transferred to EPA, in Reorganization Plan 3 of 1970) to establish general standards for protection of health and the environment from the hazards associated with source, special nuclear, or byproduct material. This authority has

already been applied to some DOE activities. In August 1985, EPA promulgated environmental standards for the management and disposal of spent nuclear fuel, high-level and transuranic radioactive wastes (40 CFR 191). These standards limit the releases from management and disposal of the subject wastes, and are implemented by the Nuclear Regulatory Commission and DOE pursuant to their authorities. EPA is also currently developing standards that will apply to the management and disposal of low-level radioactive wastes. DOE implements these standards as to DOE waste. These standards specifically address the same radioactive waste as would be present in mixed waste.

DOE waste management disposal facilities are also subject to EPA's Clean Air Act radionuclides standards promulgated in February, 1985. These standards require that DOE request approval to construct or modify any of its facilities that emit airborne radionuclides. EPA is also developing monitoring and quality assurance requirements relative to DOE airborne radionuclides releases.

This brings us to a discussion of Senator Glenn's bill. Title III of S.1085, the "Mixed Hazardous Waste Amendment Act of 1987" is intended to subject radioactive mixed waste to RCRA as well as the AEA. The bill would amend the existing RCRA exemption for source, special nuclear, or byproduct material.

It would state that such materials do not constitute "solid waste" "unless such materials are a part of any mixture or combination, if the other constituent part of such mixture or combination is a solid waste." Although the intent of the bill as stated in section 303 is to clarify existing law, the bill's language could be interpreted to confer RCRA regulatory authority over the radionuclide component of mixed waste, which is currently subject to DOE and EPA authority under the AEA.

The Agency's position is that while source, special nuclear, or byproduct material are exempt from RCRA regulation, the definition of the term "solid waste" includes solid waste present in a matrix or mixture that includes source, special nuclear, or byproduct material. This position maintains the existing statutory plan of joint regulation of the radioactive and chemical hazards (under AEA and RCRA respectively) to provide the most appropriate management practices for the distinct hazards associated with each type of waste.

We expect joint regulation of DOE mixed waste to proceed along the lines we have already established with the NRC regarding the regulation of commercial low-level mixed wastes. A number of cooperative initiatives to effect joint regulation of commercial radioactive mixed waste have been taken over the last year. These include joint development of a series of documents to

clarify the applicability and implications of compliance with the joint regulatory structure required for mixed waste management.

Both DOE and EPA are considering several initiatives aimed at implementing joint regulation of radioactive mixed waste. The two agencies have had discussions and have begun planning how the permitting process will be implemented, what the roles of DOE Headquarters and DOE Operations Offices are, and who would be the responsible party for implementing management requirements and assuming liability for facility operations, in light of the significant roles that their operating contractors play.

On the other hand, if the intent is to subject the radionuclides present in mixed waste to RCRA, this bill would create several difficulties which would require us to oppose it in its present form.

First, giving EPA jurisdiction under RCRA to regulate the radioactive component of DOE mixed waste could create an anomalous situation in which a radionuclide in DOE wastes is subject to RCRA while the identical radionuclide in a waste generated by NCR licensees would not be subject to RCRA.

Second, it could lead to different treatment of the identical radionuclide depending only on whether it is a component of mixed waste. RCRA would apply only if the radionuclide was a component of mixed waste.

Third, giving EPA jurisdiction under RCRA to regulate the radioactive component of mixed waste would greatly expand the basis of EPA jurisdiction because RCRA, unlike the AEA, would give EPA implementation and enforcement authority as well as the present general standards setting authority. Subjecting source, special nuclear, and byproduct material to the detailed RCRA regulatory process would be a major departure from current practice.

In conclusion, I believe that joint regulation of mixed wastes at DOE facilities is feasible without enactment of additional legislation. EPA efforts with the NRC have demonstrated that this can be accomplished within the existing regulatory framework. I believe that our experience over the last six months in conjunction with the final byproduct rule justifies confidence that effective joint regulation of DOE mixed wastes can be accomplished.

We will be happy to answer any questions the Committee may have.

* * *

Hearing Before the
Senate Committee on Governmental Affairs
Tuesday, June 16, 1987, 9:30 a.m.
342 Dirksen Senate Office Building
J. F. Salgado, Under Secretary
U.S. Department of Energy

INTRODUCTION

Mr. Chairman, thank you for the opportunity to testify before this Committee on S.1085, "The Nuclear Protections and Safety Act of 1987." Accompanying me today are Troy Wade, the Principal Deputy Assistant Secretary for Defense Programs and Delbert Bunch, the Acting Deputy Assistant Secretary for Safety, Health and Quality Assurance.

As Assistant Secretary Mary Walker testified before this Committee on March 12, 1987, the Department has given serious thought over the past 6 months to the question of outside oversight of the Department's nuclear production and research facilities. As you know, concerns have been expressed by Members of Congress, outside experts, the Department's independent ES&H organization, and its program and Operations Offices about the level of safety assurance afforded at our nuclear facilities, and whether it is comparable to that required of NRC licensed facilities. I believe we have reached a point of consensus, within and outside of DOE, that the Department and the public stand to benefit from a systematic, institutional approach to outside oversight. Secretary Herrington endorses the establishment of an independent body outside of the Department that would oversee the safety of these nuclear facilities, and has stated so publicly.

The Secretary's position represents a landmark development in the Administration's efforts to strengthen the Department's capabilities and credibility in the safe operation of our nuclear facilities. The concepts and objectives presented in S.1085, and other bills, represent important first steps in facilitating the dialogue between Congress and the Administration on what form such outside oversight should take.

The Department's Progress on Nuclear Safety Oversight

Before proceeding to more detailed comments on S.1085 and outside oversight of DOE nuclear facilities, I would like to share our perspective on the state of nuclear safety oversight in the Department.

The issue of independent outside oversight of the Department's nuclear facilities is not a new one. Under DOE's and the Nuclear Regulatory Commission's (NRC) common predecessor agency, the Atomic Energy Commission (AEC), two different oversight systems coexisted under the same roof -- a regulatory one for the commercial power reactors and a self-regulatory system for the government-owned defense and energy research facilities. Similarly, the Advisory Committee on Reactor Safeguards (ACRS) provided reactor reviews, including safety analyses, for both the commercial power reactors, and the defense production and research reactors. Although the regulatory environment in which the AEC operated was much different than it is now, those safety oversight systems proved to be complementary, and owed much to the fact that the AEC was on the cutting edge of nuclear safety technology. With the enactment of the Energy Reorganization Act of 1974,

this arrangement ended. NRC was established to regulate commercial power reactors and the Energy Research and Development Administration, which became part of DOE, oversaw the government-owned defense and energy research facilities. Over time, the disparity between the two systems has grown. Questions of safety adequacy and comparability were inevitable.

When Secretary Herrington arrived at the Department in early 1985, he found that the system of checks and balances built into the Department's environment, safety, and health program needed to be strengthened. In particular, the Secretary concluded that the Department's Environment, Safety and Health Office required more organizational prominence, greater independence, and more resources to exercise its oversight responsibilities effectively. As a first step, the Secretary initiated an immediate review of the Department's environment, safety, and health programs and activities.

The objectives of this review were in keeping with the Secretary's firm belief that the Department's mission to meet national security and scientific objectives carries with it a fundamental responsibility to assure worker and public health and safety. In the earliest days of Secretary Herrington's tenure, he made this responsibility one of his top priorities and he has consistently committed the management and resources of the Department to assure its effective implementation.

Based on the results of this review, the Secretary took immediate action to elevate the Environment, Safety, and Health organization to the Assistant Secretary level. This was in recognition of the need for greater independence and organizational "clout" for the ES&H function. In addition to strengthening the Department's oversight of its contractor operations, he undertook several key initiatives in the safety and environmental areas, including a DOE-wide Environmental Survey of the Department's existing and potential environmental problems and a Technical Safety Appraisal program to evaluate all aspects of safety at DOE's nuclear facilities.

We have already testified before you on the success of these initiatives. After little more than a year, the Environmental Survey and the Technical Safety Appraisals are nearing their midway points (16 Technical Safety Appraisals, and 14 Surveys have been performed to date). These activities have established for the first time in DOE's history, an effective baseline of safety and environmental information about the Department's facilities and operations. They also have identified key ES&H compliance and policy issues which have been or are being addressed. To assure a high-level of specialized technical expertise, the teams that conduct the Environmental Survey and Technical Safety Appraisals include non-DOE experts. A comprehensive Computer Assisted Tracking System is now in place to assure that Headquarters and field response to recommendations is adequate and timely.

5

Technical Safety Appraisals have served to effectively identify and characterize technical safety issues. They have been a major means by which the Department has taken decisive action, including modification of operations, at several of these facilities. The Technical Safety Appraisals have been augmented by special reviews of DOE's production and research reactors by the Roddis panel and the National Academies of Science and Engineering, which were chartered by the Secretary following Chernobyl.

Secretary Herrington's approach to establish a robust safety and environmental oversight function has drawn public and Congressional attention to the fundamental issue of assuring the continued safe operation of the Department's aging complex. As our surveys, appraisals, and outside reviews have identified problems and deficiencies, public concern about DOE's ability to credibly assure continued safe operations have grown. We respect that concern, and we stand firm in our commitment to a rigorous and open process, and will seek the means to institutionalize a credible oversight system that promotes public confidence. The Secretary has established a high standard of accountability to assure that indicated corrective actions are taken in a concerted and timely fashion. Cases in

point include the Department's responses to findings at N Reactor, the Savannah River production reactors, and the High Flux Isotope Reactor at Oak Ridge where conservative courses of action were ordered in light of questions concerning safety adequacy. The message is simple: An acceptable level of safety assurance is a pre-condition for continued operation of DOE facilities.

The Secretary's program to strengthen the environmental, safety, and health functions goes beyond these initiatives related to surveys and appraisals. It is fully understood that our goals for these functions will be achieved in large measure through the efforts of management and staff which have onsite line operating responsibilities. The Department is examining how to further improve internal safety oversight and existing safety standards and their application in the workplace. One result was the establishment of an independent shut down authority for the Assistant Secretary for Environment, Safety and Health. Another has been more effective use on the part of our Operations Offices of the Cost Plus Award Fee incentive system. We recognize that oversight alone does not assure the safety of complex facilities and operations. What is needed is nothing less than a total Department-wide commitment to the principle of "safety first." This principle must be fully understood by all levels of management, supervision and staff, and integrated into every aspect of facility and program operations. Also, clear lines of responsibility and authority with unmistakable points of accountability are critical. With this in mind, we are focusing on several areas that are fundamental to improving

the level of safety assurance at DOE facilities, regardless of how oversight is addressed:

- Strong management commitment to safety - The Secretary has made it clear that line management is responsible for safe operations of our facilities. Support of the Department's Environment, Safety, and Health program must be treated as a first priority by all personnel at every level.

- Increased funding for capital improvements - A major effort is underway at DOE to address the Department's aging facilities issue by identifying needed facility replacement and enhancements. Budget requests have been and will continue to be submitted to respond to these needs.

- Clearer standards for performance - In order for any oversight system to work effectively, the "rules of the road" must be clearly defined and uniformly enforced. The Department has made gains in strengthening the DOE Orders, assuring their uniform enforcement through line management and the safety appraisal programs, and assessing their comparability with the licensed commercial facilities; further improvements are warranted and are under review. A new Office of Safety Policy has been established to be a focal point for change in this area.

- Better trained workers - Initiatives have been taken to upgrade facility training programs through a DOE-wide safety training coordination program and appraisal reviews. In addition, we have opened discussions with the Institute of Nuclear Power Operations and other groups to explore other training possibilities. Improvements such as an accreditation system and expanded job and task analyses are key priorities that are being pursued.

Our objective is to further develop institutional tools -- organization, standards, procedures, management and enforcement mechanisms -- which will lend a continuity of purpose to the Department's environment, safety, and health program and assure its continued effectiveness in the future.

I believe the message is clear: The Department's safety and environmental program is fundamentally sound and significantly stronger than it was in the past. Serious issues remain -- a severely aging complex of facilities, constrained resources, and a legacy of problems from a past climate of policy and operations that differs substantially and dramatically from today's. We are continuing to develop strategies to address these issues, including outside oversight and fundamental institutional change. We firmly believe that these strategies must be developed expeditiously but with reasonable caution to avoid sudden or radical institutional adjustment.

The Three Mile Island event and the controversy surrounding it, for example, generated numerous proposals that would have significantly altered the prevailing institutional system of safety oversight, in that case, the NRC and ACRS. In the final analysis, while most of those proposals were ultimately discarded, safety oversight improved dramatically because of a stronger commitment on the part of NRC, the ACRS and industry to address the safety issues that were raised. In the context of this lesson-learned, the Department believes that whatever oversight proposals are adopted should build on Secretary Herrington's initiatives and the gains the Department has achieved since 1985. This includes a strong commitment for safety on the part of line management, coupled with strong independent oversight by DOE's Environment, Safety, and Health organization. Care must be taken to assure that these gains and the programs in progress are not sacrificed to achieve only an appearance of improvement.

Concepts and Criteria for Outside Oversight

While it has become clear that some changes to the Department's system for assuring safety are warranted, it is equally clear that, as a first order of business, the issues to be addressed and the criteria for selecting an oversight option must be clearly defined. From our own assessment of this issue, we believe the following concepts should govern the premises on which outside oversight is established:

- o Independence: An oversight group must bring its expertise to bear on objectively identifying problems and reviewing the Department's

solutions without being swayed by vested or extraneous influence, whether it be DOE concerns over mission or public concerns that the group be seen as "hard hitting." However, in maintaining its independence, the group must also provide its advice based upon a clear understanding of the structure and mission of the facilities it is reviewing.

- o Accountability: The Executive Branch must be fully accountable for its decisions. Any decision that has important safety impacts should be open for examination by any independent group charged with oversight of DOE. In turn, an oversight group's findings and recommendations must be made public to further assure accountability on the part of both parties.

- o Safety Assurance: Outside safety oversight should provide an institutional means to improve and assure safe operation of DOE facilities by establishing overall safety goals and judging the Department's performance against those goals. Oversight conducted solely in the context of regulatory-like appraisals or investigations cannot compel good performance; it can only point out problems and recommended areas for improvement. What is needed is an integrated program of outside independent assessment, a strong internal ES&H program, and mechanisms for self-improvement at the contractor level.

- o Practicality: Whatever oversight mechanism is selected, it must be practical and efficient in design and implementation, and should not impair the Secretary's responsibility to reconcile safety imperatives with national security and other requirements that derive from the Department's mission.

The purposes identified in S.1085 appear to address some of these concepts, but it is important that any new legislation be clear as to the principles which underlie the detailed provisions. No oversight mechanism can relieve DOE of its responsibility to ensure acceptable safety performance and sound environmental practices.

While the Department has not yet finalized its position on an appropriate outside oversight package, we have defined an overall objective and delineated a number of criteria upon which our decision will be based.

As an overall objective, the Department seeks to:

> Adopt credible outside nuclear safety oversight that retains the most positive elements of DOE's current system and strengthens institutional checks and balances, where appropriate.

In keeping with this objective, the following criteria have been developed in the course of the Department's ongoing assessment of available safety oversight alternatives. These are the same criteria that we have used as a basis for reviewing the provisions of S.1085, and other proposals for outside safety oversight.

- Provide institutional assurance that DOE facilities meet applicable nuclear safety standards, with the goal being operational excellence.
- Provide for strict accountability by DOE and its contractors for compliance with safety requirements and necessary corrective actions.
- Ensure that the system of internal and external checks and balances is complete and effective.
- Provide that the independence and strength of the Department's Environment, Safety and Health oversight function is institutionally guaranteed.
- Preserve safety as an integral part of line management responsibility.
- Assure that the most cost-effective means to provide outside oversight are implemented with minimal duplication of government effort.
- Preserve the ability of the Department to accomplish its national security and energy research missions effectively.

This list represents a starting point for discussing the relative merits of various alternatives, and for our specific comments on S.1085.

Specific Comments on S.1085

The Department agrees in principle with the objectives cited in this Bill, but believes, as a practical matter, that title I ("Department of Energy Nuclear Safety Board Oversight Act of 1987") would not achieve them effectively and could hamper severely the Department's ability to perform its national security and energy research missions. We believe that the objectives of the other titles of S.1085 regarding OSHA authority, NIOSH access, regulation of mixed radioactive waste under RCRA, and independent review of DOE's radiation epidemiology research programs, can be satisfied either directly or through existing oversight mechanisms.

A summary of our more detailed comments on S.1085 follows.

Establishment of Nuclear Safety Board (Title I):

This title would create a three-member Board and vest it with regulatory authority. The Board would not be "advisory," as in the role the ACRS assumes for the NRC, but actually would be an analog to the NRC in terms of method of appointment, direct reporting to Congress, in the provisions for binding requirements and prescribed Secretarial responses, and in the use of ACRS in a staff/advisory capacity to the Board. Based on considerations cited earlier, we believe that this approach is neither effective nor sufficiently flexible to accomplish the Bill's stated purpose. The Bill would limit the Secretary's responses to the Board's recommendations so narrowly as to restrict him from giving due consideration to important criteria (e.g., cost-benefit judgments for facility improvements beyond

those required to meet standards). In addition, these limitations would impair his ability to reconcile safety imperatives with national security and other requirements. The detriment of such provisions from the standpoint of decision-making processes ultimately may outweigh the positive gains that such outside oversight would bring to safety assurance.

Regular, direct reviews of DOE facilities are important components of any independent oversight program. However, the provision in S.1085 for an annual review of all facilities would be duplicative of the existing routine appraisal program administered by the Environment, Safety, and Health Office at DOE Headquarters, and would be inconsistent with how ACRS, for one, has approached similar oversight. In the past, the ACRS has focused its oversight activities on selected nuclear facilities and safety policy issues of significance, leaving NRC staff the responsibility for routine oversight. The Department can always benefit from additional outside oversight as long as it is not unnecessarily duplicative or burdensome.

The scope of functions given the Nuclear Safety Board by S.1085 would be confined to an annual facility safety review, investigation of "events", and review of the content and application of DOE standards. The objectives of outside oversight would be better supported by an oversight body with a broader, more flexible charter. For example, similar to the ACRS's scope of activities, such a review would consider safety analyses for new facilities prior to construction, design reviews of existing facilities, generic

safety policy issues, and the review and development of safety goals and standards.

Performance of NIOSH functions at DOE facilities (Section 203):

Section 203 is unnecessary because the DOE already cooperates fully with the NIOSH in its role of conducting occupational safety and health evaluations and research. The Occupational Safety and Health Act gives NIOSH a research and evaluation role that does not include enforcement authority. NIOSH's legislative mandate does not conflict with or duplicate DOE's mandate under the Atomic Energy Act, and it never has been the view of the Department that it is exempt from the requirement that employers cooperate with NIOSH studies and evaluations. Although there had been a legal concern about possible Privacy Act restrictions that delayed the start of a NIOSH study at the Fernald plant, the Department took steps in that case, and will take whatever measures are necessary in the future, to provide unimpeded access by NIOSH to DOE facilities. In 1986 the Office of Personnel Management issued regulations addressing this issue in detail, separating exposure records from medical records and limiting the scope of the privacy act to medical records kept on Federal employees. DOE regulations have not yet been changed to reflect this new guidance. A blanket exemption for routine use of DOE contractor exposure records by NIOSH is being considered to remove all remaining legal impediments in terms of the Privacy Act.

It is our view that NIOSH evaluations are an important source of independent epidemiological assessments which should improve DOE consistency with private industry. Recognizing this positive benefit, the Department will be reviewing the means available to complement the capabilities of the Department's own epidemiological research programs at the national laboratories by facilitating NIOSH involvement in DOE contractor operations. Accordingly, the Department views legislation in this area as unnecessary.

OSHA regulation (Section 202):

The comparability of the Department's occupational safety and health program to that of private industry is manifest in the application of OSHA policies, standards and inspections, and by actual performance of DOE's facilities in occupational safety and health. The Department consistently has outperformed private industry in terms of accident and injury statistics. Performance indicators demonstrate that injury rates in DOE facilities are one-third national averages; illness rates in DOE facilities are one-fifth national averages; fire losses are less than one-tenth of privately insured industry; and vehicle loss rates are less than half of national rates.

DOE policies require operating contractors to have in place, staff and procedures necessary to implement occupational safety and health programs that meet all prescribed national standards, including those of OSHA. Oversight of contractor operations is provided through a program of

inspections and appraisals by the DOE Operations Offices and the headquarters' independent ES&H office. S.1085 would place responsibility and authority for enforcement on OSHA, an agency which already is burdened with a much larger mission and could not be expected to devote the resources and management attention that these issues already receive within DOE. For example, OSHA does not now directly oversee any nuclear facilities. Under S.1085, it would have to acquire the expertise and experience quickly in order to effectively extend its oversight to the DOE complex.

Given the additional burden to both regulator and regulatee that regulatory oversight would present, and in light of the Department's exemplary occupational safety program and performance to date, we can see no advantage in extending OSHA regulatory authority over DOE facilities. However, the Department stands ready to review any available means to improve cooperation between, and comparability with, the Federal and State OSHA programs.

Regulation of mixed radioactive waste (Title III):

The Department agrees with the underlying purpose of Title III to clarify the applicability of hazardous waste legislation to DOE radioactive wastes. In that regard, on May 1, 1987, the Department published in the Federal Register (52 FR 15937) a final rule clarifying DOE's obligations under the Resource Conservation and Recovery Act (RCRA). The effect of the rule is that all DOE radioactive waste which contains hazardous waste components, as defined under RCRA, is now subject to regulation under both RCRA and the

Atomic Energy Act (AEA). The nonradioactive hazardous waste components are subject to regulation under RCRA, while the radioactive components remain subject to regulation under the AEA.

The Department believes that the final rule provides all the clarification necessary on RCRA's applicability to DOE radioactive wastes. Therefore, new legislation is not necessary. In addition, the Department is concerned that the proposed legislation, as currently drafted, could alter existing AEA jurisdiction for controlling the radiological hazards associated with radioactive wastes. Although the intent behind Title III may be to provide joint regulation under RCRA and AEA, we are concerned that section 304 could be construed to confer on EPA the sole authority under RCRA to regulate the radiological, as well as the chemical hazards of wastes meeting the new proposed definition of solid waste. Since there are no provisions in RCRA or its implementing regulations for controlling radiological hazards, DOE strongly opposes any provisions that could alter existing responsibilities under the AEA and thereby potentially reduce the protection of the public, workers, and the environment from radiological hazards.

Independent review of radiation epidemiology studies (Title IV):

DOE believes that its radiation epidemiology studies have been and continue to be carried out in a scientifically sound and objective manner with adequate outside peer review. However, if public confidence in these studies could be improved by an independent advisory panel, DOE has no

objections. The Department already seeks the advice of technical experts in other agencies prior to funding proposals and requires that a peer review by qualified individuals outside of DOE be included in the protocol of all studies.

To effectively coordinate research priorities with workplace safety and health concerns, it would be important that regular input be provided on the latter with provision for the involvement of NIOSH, the Department's ES&H organization, and other safety and health groups. Additionally, reviews of health effect studies require an accurate retrospective interpretation of collected dosimetry data, which again is aided by an understanding of how such data was derived. It is also our viewpoint that the particular formulation of the panel called for in the title should be reconsidered to assure that these considerations are addressed adequately.

A formally appointed advisory board that would review radiation epidemiology studies would enhance the independence and credibility of these studies, but we believe this could be accomplished without legislation. To assure a means of institutional oversight, such an advisory board should function in coordination with an outside nuclear safety oversight group (whatever option is chosen).

20

Alternatives for Nuclear Safety Oversight

As we have previously indicated, ES&H is chairing a Department-wide review of various options for responding to the need for outside oversight and enhanced nuclear safety program capabilities that organizations such as ACRS and the Institute of Nuclear Power Operations could provide. The range of options under consideration includes those that have been proposed in legislation. The alternatives fall into two categories: (1) those that accomplish change solely through outside regulation; and (2) those that accomplish change through a combination of strengthened internal oversight and formally constituted outside oversight. The former would require an existing or new regulatory authority, while the latter could be accomplished through a strong Environment, Safety and Health organization within DOE, coupled with a permanent outside advisory group.

Applying the concepts and selection criteria already cited, we have reviewed a number of possible alternatives, including the use of the ACRS, or the creation of a new nuclear safety advisory board modeled after the ACRS. While a more expansive discussion of alternatives, including those provided in S.1085, would be productive in the near future, the considerations identified in the following discussion are indicative of the type of issues that the Department believes need to be addressed before settling on a particular proposal.

21

Advisory Committee on Reactor Safeguards:

A memorandum of understanding is in effect between DOE and NRC providing for safety analysis reviews by ACRS at the Department's request. Consistent with its expertise and experience in reactor safety, the ACRS advisory role in the past has been directed to DOE's reactors. The ACRS has advised DOE on reactor safety. For example, they advised DOE on the safety analysis for the Fast Flux Test Reactor in 1978 and on the Light Water Breeder Reactor Core in the Shippingport Atomic Power Station in 1980. The benefits of ACRS reviews include its independent perspective and expertise, the professional interaction it promotes, and its enhanced accountability because of its statutory mandate and the openness of its proceedings. The effectiveness of the ACRS review process has focused attention on the ACRS as an example of one oversight mechanism that has functioned well for its intended purpose.

One option currently being reviewed by DOE is to restore the role the Committee routinely exercised in the past to assure an acceptable level of safety. Another is to expand the Committee's expertise and charter to include routine reviews of the Department's safety analyses of new and existing nuclear facilities. These reviews would include the acceptability of the analytic methodology and assumptions used in the nuclear facility safety analyses. While the existing Memorandum of Understanding could be

an immediate means to initiate these activities, some new arrangement would be required to establish an institutional basis for changing the scope of ACRS activities, expanding membership, or for prescribing routine facility reviews.

Creation of a new nuclear safety advisory board:

An alternative to an expanded ACRS would be the establishment of a new advisory board. Such a board could retain the advisory role and functions of an ACRS, but have a membership and scope of activities more specifically tailored to the Department's nuclear safety operations. The Board would consist of members who are experts in the diverse scope of issues pertaining to the nuclear safety activities of DOE, and who could be selected in a manner to ensure their independence. They would be supported by a small technical staff and would have access to the resources of the Department's Office of Environment, Safety and Health.

Such a Board could be empowered to review the Department's nuclear safety program, including standards, facility appraisals, safety analyses, and performance data. Its recommendations could be formally submitted to the Secretary on a regular basis, with periodic open meetings and an annual report.

It should be emphasized that the Department has not settled on any single option. Obviously, a wide range of possibilities exists, including the development of a "package" of oversight mechanisms which would tailor the

type of oversight to the area of need (e.g., ACRS for reactor safety analysis reviews and an advisory board for overall oversight). The Department will be prepared to provide its evaluation and viewpoints to this Committee within the next 60 days when our review is complete.

Let me also note that with reference to my previous comments and in my discussion of various nuclear safety oversight options under consideration, the Department agrees with the Committee's action in S.1085 to exempt the facilities and activities of the Naval Nuclear Propulsion Program. The health and safety responsibilities for these facilities and activities, which integrally involve both DOE and Navy elements, have been uniquely prescribed in law by codifying Executive Order 12344 into 42 USC 7158. The remarkable safety record of this program, the multiple levels of oversight already in effect, and the importance of not impairing the basis upon which U.S. warships propelled by naval reactors are accepted world-wide, justify this approach.

CONCLUSION

Secretary Herrington clearly has demonstrated his commitment to "safety first" in the Department, not only in terms of oversight, but more importantly as a condition for operating our facilities. From dealing with the legacy of past environmental practices and aging nuclear facilities, we now turn to what legacy this Administration can leave behind to ensure that the gains that have been made are not lost, and that the momentum that has been achieved will continue into the future. We firmly believe that

constructive outside oversight of the Department's nuclear facilities is in keeping with our goal to institutionalize a strong environment, safety, and health program. The Department of Energy's critical missions in national security and energy research must not be jeopardized by an environmental protection and safety program too weak to assure excellence, or by one so rigid and oppressive that these missions cannot be accomplished effectively.

We look forward to working with you, Mr. Chairman, this Committee, and your staff to develop a workable approach to outside oversight. Let me assure you that this issue is a matter of the highest priority.

DOE Response to Questions from Senator Sasser for 6/17/87 Governmental Affairs Hearing on S.1085, Glenn Nuclear Protection Bid:

Question 1: The Department of Energy recently acknowledged a breakdown in the nuclear reactor program at Oak Ridge Tennessee and voluntarily shut down all four of the reactors it operates there. Can you describe the problems you are experiencing at Oak Ridge and explain to the Committee how you are proceeding to correct them?

Answer: The research reactors at the Oak Ridge National Laboratory (ORNL) are operated for the Department of Energy's Oak Ridge Operations Office (ORO) by the Martin Marietta Energy Systems, Inc. (MMES). On November 14, 1986, MMES reported to DOE that the High Flux Isotope Reactor (HFIR) which had been shut down for normal refueling would remain down pending resolution of a potential embrittlement problem. HFIR operation was authorized in 1965, and an embrittlement surveillance program was established in 1965 to monitor the radiation induced embrittlement of the 3 inch thick, stainless steel clad, carbon steel pressure vessel. The surveillance program was not part of the technical specifications and there was no established schedule for sampling. Samples were removed in 1969, 1974, and 1983. At this time, the question of timely testing of the samples was raised. In mid-1986, as the result of a post-Chernobyl ad hoc Reactor Review and Audit Committee established by MMES, the samples that had been removed in 1983 were tested and the results were reported. It was discovered that pressure vessel embrittlement was outside the original limits established for safe operation of the reactor.

A DOE "Type B" accident investigation (DOE 5484.1) was conducted by the Oak Ridge Operations Office Manager. The investigation revealed a number of problems, some that appeared to be relevant to other operations at ORNL. Additional investigations were then initiated to determine what specific problems might exist and what actions were necessary to correct such problems.

On March 27, 1987, the Manager of ORO announced that the four other ORNL operating reactors (Oak Ridge Research Reactor, Bulk Shielding Reactor, Health Physics Research Reactor, Tower Shielding Reactor II) had been placed in safe shut down on March 26, 1987. The news release from the ORO quoted the manager as stating "I have taken this action because of cumulative concerns expressed by the Headquarters committee and concerns previously outlined by our own investigation which indicated deficiencies in ORNL management and administrative controls related to reactor operations. While there is no single concern expressed which suggests an immediate safety issue, taken together these concerns are indicative of a management problem which, if not corrected immediately, could possibly lead to a safety issue."

Question 2: Weren't the problems at the Oak Ridge Reactors originally identified by an independent third party, thus indicating the need for periodic oversight of the DOE Nuclear Program?

Answer: No, see answer to Question 1.

Question 3: The Natural Resources Defense Council testified that the Department of Energy's failure to take responsibility for its actions in Tennessee, illustrates the need for Title 3 of Senator Glenn's bill. What assurances can you provide to the people of Tennessee that such an arduous legal process will not have to be invoked in the future, if other pollution problems are identified in the area?

Answer: The problems referred to in connection with Title III relate to DOE's radioactive mixed wastes and previous uncertainty regarding the applicability of hazardous waste legislation to these wastes. On May 1, 1987, DOE published in the Federal Register (52 FR 15937) a final rule which acknowledges EPA regulation of mixed waste and, thereby, enables direct outside regulation of these wastes. This DOE action accomplishes the same purposes intended in Title III without the need for further legislative action. Further assurances are provided by Secretary Herrington's Environmental Policy Statement which commits "...DOE to conduct the Department's operations in compliance with the letter and spirit of applicable environmental statutes, regulations, and standards."

DOE response to questions for Joseph Salgado, Under Secretary, Department of Energy, submitted by Senator George J. Mitchell, June 18, 1987

Question 1: In his prepared statement, Frank White, Deputy Assistant Secretary of Labor for Occupational Safety and Health, says that DOE has been contacted by OSHA in instances where employees at DOE nuclear plants brought health and safety matters to that agency's attention, and that DOE has sent OSHA a report of the actions taken to safeguard the worksite.

a) Please provide for the record a listing of those instances from 1982 to the present time.

b) Have those reports been shared with the individual employees who brought the matters to OSHA's attention originally or to representatives of employee unions at the facilities in question? If not, please explain why.

Answer:

OFFICE	DATE OF COMPLAINT	REPORTS SHARED WITH EMPLOYEE OR NOT?	IF NOT, WHY?
1. Albuquerque Operations Office	3-6-84	No	Kansas City Area Office had OSHA notify employee
a. Kansas City Area Office	9-27-84	No	" "
	10-9-84	No	" "
	10-10-84	No	" "
	6-3-87	No	" "
b. Management Systems Division	5-20-86	No	Employee only gave name of management official
c. Rocky Flats Area Office	11-9-84	Yes	---
	3-14-83	No	OSHA notified employee

2. Chicago Operations Office	1-13-84	No	Anonymous complaint--Supv. and employee notified
3. Idaho Operations Office	2-83	Yes	---
4. Nevada Operations Office	None		
5. Oak Ridge Operations Office	12-5-85	No	Former employee--OSHA notified employee
6. Richland Operations Office	None		---
7. San Francisco Operations Office			
a. Lawrence Livermore National Laboratory	1-13-87	Yes	---
	10-11-85	Yes	---
	4-26-85	Yes	---
b. Stanford Linear Accelerator Center	7-26-85	Yes	---
	7-2-85	Yes	---
8. Savannah River Operations Office	None		
9. Pittsburgh Naval Reactors Office	None		
10. Schenectady Naval Reactors Office	2-15-84	No	Anonymous complaint concerning Building Foundation Excavation--Supv. notified

TOTAL - 17

Question 2: In your written testimony (page 15), you indicate that the Department will take whatever measures are necessary in the future to provide unimpeded access by NIOSH to DOE facilities. You go on to say that DOE regulations have not yet been changed to reflect new guidance on limiting the scope of the privacy act to medical records kept on Federal employees issued in 1986 by the Office of Personnel Management. When can the Committee expect to see new DOE regulations reflecting this guidance?

Answer: Within 60 days, we plan to issue new DOE regulations in the Federal Register.

QUESTIONS FROM SENATOR ROTH

1. The General Accounting Office outlined five criteria that should be considered when forming an independent oversight board. Do you agree with these criteria? If yes, do you believe that the Nuclear Regulatory Commission meets the five criteria outlined by GAO?

We agree with the criteria, but do not believe it to be a complete list. In the Under Secretary's written statement for the June 17, 1987 hearing, he identified what the Department considers as equally important principles, including the provision of effective safety assurance and practicality. While the Nuclear Regulatory Commission could be construed as meeting the five criteria the GAO proposes, we do not believe the NRC would, at present, represent a practical or effective means of oversight for the Department's nuclear facilities.

2. Considering the responsibilities of the new board as outlined in the legislation, what type of resources, personnel and other-wise, do you believe would be required? Specifically, what would be the staffing needs of the new board? For example, would the new board require on-site inspectors? According to the written statement of John Ahearne, the new board would have to employ several hundred individuals. Do you agree with this assessment?

The responsibilities and process outlined in the current version of S. 1085 (as of July 21, 1987) would entail a wide range of both staff and budgetary resources. Because of the broad functions prescribed under paragraph (g) and the regulatory-like provisions prescribed under paragraph (h) governing the Secretary of Energy's response to recommendations, the Board will require the support of both technical staff and legal/policy staff to carry out its responsibilities. While Senator Glenn in a statement during the June 17, 1987 Governmental Affairs Committee hearing expressed the Committee's intent not to duplicate the capabilities of the Department's ES&H staff, the current legislation does not now include language which would provide such assurances over time. Unlike an advisory body such as the Advisory Committee on Reactor Safeguards, the Nuclear Safety Board proposed in S. 1085 will require legal and administrative support that would likely go beyond what the Department could now make available. It is likely that without legislative constraints, the Board would respond to what will likely be an expanding oversight role by expanding those resources directly available to it, i.e., immediate staff and consultants. This expanded role could include onsite inspectors, a general counsel office, and administrative law functions as a function of how

experience will define the Board's future role. In striving for comparable oversight to that provided by NRC, it is likely that the Board's staff (consisting of immediate administrative/legal/technical staff, consultants, and full time agency support staff (e.g., DOE, NRC), would eventually number several hundred.

3. Assuming that a honest difference of opinion could exist over safety standards involving a technical question, and given the current language of S.1085, what if the DOE disagrees with the independent boards's recommendations? Do you see a need for a third party arbiter to resolve disputes involving the independent board and DOE on technical issues? Are there any current areas of government that could serve as an example for resolution of this type interagency dispute?

Based on the current version of S. 1085, disagreement by the Secretary with the Board's recommendations is not recognized as an acceptable response in paragraph (h)(1). In assuring strict adherence to the Board's recommendations, except where issues of national security and practicality arise, S. 1085 does not address circumstances where disagreements founded on divergent technical safety or policy interpretations. The Department believes an appeals process, with a third party arbiter, if necessary, should be part of the process by which the Board makes its recommendations to the Secretary. In this regard, outside consultation by independent, expert groups such as the Advisory Committee on Reactor Safeguards or the National Academy of Sciences would provide the Board and the Secretary additional advice and perspective in resolving such issues. Example of dispute resolution exists for the Federal government, although not as an independent arbitration between agencies. Although there have been attempts to provide for improved coordination of agency positions via interagency committees and work groups, we are not aware of any formal mechanism for dispute resolution between Federal agencies, other than the Office of Management and Budget which often arbitrates disputes between or among Federal agencies.

TESTIMONY OF JOSEPH M. MISBRENNER
PRESIDENT OIL, CHEMICAL & ATOMIC WORKERS UNION
ON S.1085, NUCLEAR PROTECTIONS AND SAFETY ACT
COMMITTEE ON GOVERNMENT AFFAIRS
U. S. SENATE
JUNE 17, 1987

My name is Joseph Misbrenner and I am the President of the Oil, Chemical & Atomic Workers Union, AFL-CIO. I am here today to present testimony on behalf of the AFL-CIO, two of its Constitutional Departments, the Industrial Union Department and the Metal Trades Department, and my own union in support of your bill, S.1085, the "Nuclear Protections and Safety Act of 1987".

We heartily endorse your action in introducing this landmark proposal. We believe it is time to bring the problems of safety of our nuclear plants and facilities and the issues of health and safety of workers in those plants and facilities out of the shadows of mystery and paternalism, and into the mainstream of protections for these workers and their families.

This legislation will cover many thousands of workers at numerous facilities used in a wide variety of nuclear production. These facilities and the workers in them are presently excluded from the protection of the Occupational Safety and Health Act by virtue of Section 4(b)(1) that provides an exemption for facilities covered under the Atomic Energy Act of 1954.

The findings in S.1085 set the tone for the debate on this bill. The proposal that Congress find 1) there is a great need for vigorous investigation of events at nuclear facilities controlled by the Department

of Energy; and 2) continual review and assessment by expert outside authorities would be of assistance in identifying actual or potential safety problems and needed standards at these nuclear facilities, is a recognition that something is not right with the approach to health and safety issues in this industry and by the cabinet agency, DOE, that currently bears the responsibility for carrying out safety and health protection with respect to the population outside of the plants as well as the workers within them.

S.1085 contains four separate Titles. All of them interact to create a comprehensive program of nuclear protection and safety. This testimony is principally concerned with Title II (Application of OSHA and NIOSH to DOE Nuclear Facilities) and Title IV (Radiation Study Advisory Board Act of 1987). We have a few comments about the relationship of Title I (Independent Nuclear Safety Board Oversight Over Department of Energy Facilities).

The background of this present legislative effort is quite comprehensive. In the last few years, the General Accounting Office, numerous public interest groups and this Committee have engaged in extensive study of the safety of the many nuclear plants and facilities in the United States. Many of these facilities date from World War II and have aged to the point where there is serious concern with respect to the environmental impact on the communities surrounding these facilities, and serious concern with the health hazards to workers operating the facilities.

Serious concern exists with respect to the radiation hazards that workers and their families are exposed to in these facilities as well as to the general public. As these facilities age the evidence available suggests that workers exposed to radiation increases dramatically.

Other health effects are also of serious concern. The long latency associated with development of disease from exposure to many toxic substances used in these facilities requires a detailed concern about the extent of exposure to workers in these facilities over the last decades.

The ability to determine the degree of radiation exposure to workers, for example, is hampered by the overriding obsession with "national security" and the heavy secrecy surrounding the operation of these facilities.

Our history in bringing these problems to the attention of Congress and the Public is evident for all to see. The American Trade Union movement was the principal advocate for the comprehensive occupational safety and health legislation with standards, research, sanctions, and enforcement enacted by the Congress in 1970. My own union, the OCAW, was in the thick of the legislative action, and we have been focusing public attention on the value of this law since its inception.

We believe that the concepts embodied in S.1085 represent the correct analysis and the process required to bring the best health and safety protection to atomic workers, a situation that sadly, and unfortunately, does not now exist.

We want to have a program of accountability, standards and enforcement. We want to build on the existing statute. For us, OSHA is the state of the art in worker protection.

The existing system administered by DOE is a product of another era. It was developed at a time when the mystery of nuclear power overwhelmed our society. The Atomic Energy Act of 1954 that placed all of the responsibility for these safety and health questions in the hands of the Atomic Energy Commission was Congress' response to the twin fears of the times, nuclear power and securing the national security.

We believe that protection of the health and safety of workers in these facilities can be accomplished without sacrificing production quality or the security of our Nation. There is nothing in protecting the national interest that requires the continuation of the exemption from OSHA for the Department of Energy, the successor to the AEC for managing the nuclear programs.

I would like now to be more specific with respect to our concern with the present system and our endorsement of your proposal for improvement. Let me return to the findings in S.1085 to understand what we believe are the requirements for an effective system and the concerns we have that the present arrangements are not working, and cannot be fixed short of the comprehensive proposal of S.1085.

The legislation would have Congress find that 1) worker health and safety at Department of Energy nuclear facilities could be made substantially safer by applying the standards developed by experts in the field of occupational health and safety; 2) the Secretary of Labor has a longstanding responsibility for the health and safety of workers (including the enforcement of occupational health and safety standards and other protective labor standards and programs) and could provide substantial assistance in creating and enforcing the standards; and 3) the Secretary of Health and Human Services has a continuing responsibility for evaluating health needs related to radiation and toxic substances standards and could provide substantial assistance in creating and enforcing the standards.

We have come to the view that the above requirements are urgently needed because the existing arrangements simply are not working to protect the health and safety of our members. What we presently call the safety and health program for protecting workers at these nuclear facilities is a hodge podge of rules and procedures for which the principal need, that of accountability is sorely lacking. The health and safety program of DOE, is at best an example of failed volunteerism. What may have been considered acceptable for the Atomic Energy Commission a generation ago, is simply not now appropriate.

What has brought us to this conclusion that the present method is inadequate is the growing realization that the Department of Energy approach does not give priority to the protection of workers. Rather, the program is perceived as supportive of the contractor community as DOE's

principal client. There is a lack of confidence by the workers that DOE cares about them. In our judgment it is affirmation of our longstanding belief that you cannot put the enforcement power in the hands of the agency whose lifeblood is the service performed by the contractors in the DOE production facilities.

The existing system fails to provide the measure of accountability to the worker that is the essence of a proper or appropriate health and safety program.

Under existing procedures, DOE operates an administrative safety and health program that relies on the good faith of the contractor to carry out its requirements. The process is geared to the relationship between the DOE as the owner, and private companies that operate various facilities. For the most part, DOE holds the contractors responsible for carrying out the safety and health program at the facilities. Our main problem, and one that repeats itself over and over, is that no one knows who is minding the store. You will hear from witnesses today that the DOE relationship is totally frustrating and, in the view of many of our members, a program that is not being operated in good faith to the workers for which is it supposed to provide protection.

Under existing procedures with DOE there is no feedback to workers. Complaints are not handled well, if at all. Enforcement of regulations is handled by negotiation between DOE and the contractors, and workers must rely on the collective bargaining process to participate in such health and safety programs that do exist. OSHA which has substantial expertise is not allowed in the facilities.

Workers do not have a role in the process for setting standards, and such standard setting as may exist does not appear to be well understood by those who are going to have to work under the standards.

Health effects studies relating to toxics and radiation are either non existent, or cloaked in secrecy.

Standard setting is a public process. There is a strong role for NIOSH and accountability for results. Enforcement must not be whimsical, and there must be identifiable complaint process with a known system for enforcement.

All of these requirements do not have to be invented. They are presently embodied in the Occupational Safety and Health Act, and will readily adapt to the nuclear industry.

We also want to emphasize that we are concerned with more than just radiation problems. While our members are increasingly concerned over the exposure to workers in plants where DOE has said there is no danger from the radiation it is the exposure to other substances, and the cavalier attitude on basic, day to day health and safety issues, that has caused us to support this change in responsibility.

Mr. Chairman, you are to be commended for this initiative. We fully support your approach as set out in the Titles of the bill. We have some suggestions for improving the legislation and will be pleased to provide

our technical suggestions to the Committee as required. Generally, our comments on S.1085 are as follows:

1. Clarify the duties of the Board in Title I. We do not believe the Board should be structured as the overseer of the Secretary of Labor. It is our understanding that the Board is to protect the surrounding community and is not designed to deal specifically with worker health and safety that otherwise is in the purview of the Secretary of Labor in the bill. Clarification is important because of the need to have strict accountability for the enforcement of the OSHA requirements under the bill.

2. We do not believe a partnership with DOE is envisioned. The Secretary of Labor must have, as in OSHA, the authority to Act. The Secretary cannot be placed in a situation where he will have to negotiate safety and health programs by bargaining with the Secretary of DOE. There must be responsibility in the Secretary of Labor to secure a result.

3. Federal workers need a more comprehensive enforcement scheme. There are a number of DOE personnel working in the nuclear facilities. Normally they are not under OSHA's jurisdiction, and even if they become subject to OSHA as it presently exists, there is not an adequate enforcement program for Federal workers.

4. The role of NIOSH needs to be clarified and strengthened. We believe that NIOSH must play the principal role in the health effects studies under the legislation, and should be given primary responsibility for dealing with radiation health concerns.

5. If we are serious about extending to nuclear workers at least the same protections now covering other industrial workers, then all criteria and standards development functions -- including those peculiar to the nuclear industry -- should be concentrated in NIOSH. The role of EPA, in making recommendations on ionizing radiation control in the workplace, should be abolished. EPA has neither the necessary skills, nor the desire to develop the skills, to become an effective advisor on issues associated with the workplace. From an administrative point of view, the continued dilution of authority in standard-setting can only mean a perpetuation of the inaction and ineptness that has characterized worker protection in the past.

Mr. Chairman, the evidence is substantial and the need is clear. Whatever the prior history and basis for providing the exemption from OSHA protection for these workers no longer exists. They have real needs and concerns that are not now met by the existing scheme. Accordingly, it is important that S.1085 proceed speedily to rectify this problem.

Thank you.

Testimony of
Philip J. Landrigan, M.D., M.Sc.
Professor of Community Medicine

Director
Division of Environmental and Occupational Medicine
Department of Community Medicine
Mount Sinai School of Medicine
New York 10029

Concerning S.1085

Before the
Committee on Governmental Affairs
United States Senate
Washington, D. C.

June 17, 1987

ENVIRONMENTAL AND OCCUPATIONAL MEDICINE
DEPARTMENT OF COMMUNITY MEDICINE
MOUNT SINAI SCHOOL OF MEDICINE OF THE CITY UNIVERSITY OF NEW YORK
NEW YORK, NY 10029

Philip J. Landrigan, M.D.

Mr. Chairman and Members of the Committee.

My name is Philip J. Landrigan, M.D. I am Professor of Community Medicine and Director of the Division of Environmental and Occupational Medicine at the Mount Sinai School of Medicine in New York. I direct a research program at Mount Sinai that conducts a broad range of clinical and epidemiologic studies of the health effects of human exposure to environmental toxins. I am a board-certified specialist in Occupational Medicine, Preventive Medicine and Epidemiology. A copy of my curriculum vitae is attached to this testimony.

From 1979 through 1985, I was Director of the Division of Surveillance, Hazard Evaluations and Field Studies of the National Institute for Occupational Safety and Health (NIOSH). There I was responsible for directing the NIOSH Health Hazard Evaluation and Epidemiology Programs. I had the opportunity on several occasions to supervise studies which NIOSH conducted of occupational exposures in facilities operated by the U. S. Department of Energy (DOE).

OVERVIEW OF S.1085.

I would like to begin my testimony by expressing my strong support for S.1085, a bill to create an Oversight Board to ensure the safety of United States Government nuclear facilities, to apply the provisions of OSHA to certain DOE nuclear facilities, to clarify the jurisdiction and powers of government agencies dealing with nuclear wastes, and to ensure independent research on the effects of radiation on human beings.

S.1085 is a bill which is made necessary by legitimate and unresolved concerns about the safety of U.S. Government nuclear facilities and about the health of workers employed in those facilities. This bill will provide for creation of a series of independent mechanisms for assessment and remediation of health or safety problems which may arise at DOE facilities. It should, therefore, be widely accepted by reasonable persons who are concerned about the safety of these facilities, and who are concerned to prevent even the appearance of conflict of interest in matters pertaining to the health and safety of persons associated with these facilities.

Philip J. Landrigan, M.D.

In my review of S.1085, I have focused my attention on Titles II and IV. The topic areas considered in these two Titles are closest to my background and to my professional expertise.

TITLE II: APPLICATION OF OSHA AND NIOSH TO DOE NUCLEAR FACILITIES.

The central focus of Title II is to extend the provisions of the Occupational Safety and Health Act of 1970 to cover facilities operated by DOE. Under this Title, OSHA standards and NIOSH guidelines would apply in DOF facilities and would serve as a basis for determining whether occupational exposures were within acceptable limits. Additionally, this Title provides that NIOSH investigators and OSHA inspectors will have unrestricted access to DOE-operated facilities and to records in those facilities which are pertinent to occupational health and safety. Under this Title, therefore, DOE facilities will no longer be exempted from provisions of the the Occupational Safety and Health Act.

In my opinion, the provisions of this Title are timely and necessary.

The difficulties which exist under the present system of exemption of DOE-operated facilities from the provisions of the OSHA Act are well illustrated by problems which NIOSH encountered in its efforts to undertake health hazard evaluations at the Piketon Nuclear plant, Piketon, Ohio and at the Fernald Plant near Cincinnati, Ohio. Both of those evaluations took place during my tenure at NIOSH, and I had the opportunity to experience first-hand the substantial obstructionism of public health and preventive medicine which was generated by DOE and its contractors in each of those instances.

In regard to the Piketon plant, NIOSH received a written request for health hazard evaluation on June 21, 1979 from Local 3-689 of the Oil, Chemical and Atomic Workers International Union (OCAW). This request asked that NIOSH evaluate the possible occurrence of excess cancer mortality in workers at the plant.

On July 13, 1979, my office at NIOSH informed Goodyear Atomic, the DOE contractor who operated the Piketon plant, by letter of our intention to undertake a health hazard evaluation. Goodyear Atomic failed to reply to that letter.

On July 20, 1979, I received a telephone call from Mr. James Foutch, a DOE attorney, who stated that the Piketon plant was owned by DOE, and that DOE facilities are exempt from the provisions of the OSHA Act and thus protected against NIOSH health hazard evaluations. He urged that NIOSH not become involved in an evaluation. Two days later, I received an additional telephone call from Mr. Wiley Jackson of the Oak Ridge Operations Office of DOE. Mr. Jackson confirmed the statements of Mr. Foutch.

On July 31, 1979, I sent a letter to Mr. Robert Hart, Operations Manager of Oak Ridge Operations for DOE, suggesting a meeting to discuss the issues. I received no reply to that letter.

On September 4, 1979, I again wrote to Mr. Robert Hart to inform him that NIOSH had scheduled an initial visit to the Piketon plant. Subsequently, Mr. Foutch called and suggested that a meeting be held in Cincinnati rather than Piketon. A meeting was scheduled in Cincinnati for September 12. However, DOE declined to attend when they learned that the Union would be present. It is standard NIOSH practice that all meetings conducted pursuant to a health hazard evaluation be tripartite in nature, and that they include representation from NIOSH, management, and labor. In essence, then, the DOE attorney was asking NIOSH to violate its stated policy. When NIOSH refused to violate its policy, DOE refused to attend the meeting.

On September 13, 1979, I sent a letter to Mr. Foutch asking him to reconsider the DOE decision not to meet with the Union and NIOSH.

On September 17, 1979, Mr. Foutch wrote NIOSH reiterating the DOE position not to meet with NIOSH if the Union were present.

On October 12, 1979, NIOSH notified DOE and Goodyear Atomic that a walk-through visit had been scheduled at the plant for October 22, 1979. However, DOE refused to allow this visit.

Finally, on November 28, 1979, after the intervention of Senator Glenn's Office, a walk-through was conducted and an investigation begun. Over five months had elapsed from initial receipt of the written request for evaluation until the

conduct of this initial walk-through. Such delay and obstruction is unconscionable in any circumstance involving matters of health and safety, and is particularly unconscionable when perpetrated by an agency of the United States Government. This experience illustrates with painful clarity that neither occupational health nor preventive medicine were well served by the behavior of DOE or its contractor at the Piketon facility.

NIOSH experienced a similar series of frustrations and delays at the hands of DOE and its contractor NL Industries in regard to a request which NIOSH received in 1981 to undertake a health hazard evaluation at the Fernald, Ohio nuclear facility. I shall not discuss that episode in detail, because I understand that it will be presented to you by another witness this morning.

The clear lesson to be learned from the experiences at Piketon and Fernald is that the present legislative and administrative arrangement, by which the DOE is granted exemption from the provisions of the Occupational Safety and Health Act is ill-advised and should not be allowed to continue. While a general obligation exists for DOE to protect the health and safety of their workers, the procedures and rules which have been developed by impartial experts in occupational health and safety at NIOSH and OSHA since 1970 under the provisions of the OSHA Act currently have no force in DOE facilities. As a result, workers in DOE facilities have less protection from occupational exposures than workers employed in the private sector.

This second-class status extends both to DOE employees as well as to workers employed by contractors in DOE facilities. These contractors, although they function as private employers, are simultaneously agents of the Federal Government. By virtue of their role as agents of the government, these contractors claim exemption from the requirements of the Occupational Safety and Health Act, even though these same employers are subject to those requirements in other facilities which they operate. The result of this unbalanced arrangement is that employees of DOE contractors are second-class citizens in American industry with respect to protection against occupational hazards. Such workers do not have equal protection under the law.

Mr. Chairman, your concept that DOE facilities be made subject to the authority of the Occupational Safety and Health Act is eminently sound. It ought to be implemented immediately. My only specific suggestion in relation to Title II of the Bill is that a strict time limit be set within which time the Secretary of Energy must agree to place DOE facilities under the provisions of the OSHA Act. I suggest a limit of sixty days. Further delay is not justified, since such delay may be associated with continuing exposure of DOE workers to hazardous and radioactive substances and continuing risks to life and health.

TITLE IV: RADIATION STUDY ADVISORY BOARD ACT OF 1987.

This section of the Bill notes that there are many fundamental unresolved questions concerning the long-term health effects of exposure to radiation. To resolve those issues, Title IV proposes creation of an Advisory Board which will advise and assist the Secretary of Energy in conducting epidemiologic studies of the effects of radiation, but which shall be largely independent of the DOE.

In my opinion, this is an excellent suggestion. Over the past four decades, the DOE and its precursor agencies have conducted numerous epidemiologic studies of the health effects of radiation. Many of these studies have been technically excellent, and have been conducted by competent investigators.

Unfortunately, however, suspicion attends the results of these studies in the eyes of many scientists and members of the general public. This suspicion does not arise from doubt about the technical competence of the researchers who have conducted these studies, or about their personal integrity. The suspicion is founded in the fact that DOE is in a dual position in regard to these studies. DOE is simultaneously in the position of promoting nuclear power and nuclear-related activities, while at the same time in the position of attempting to monitor and protect the health of workers engaged in nuclear activities. There is an inherent conflict of interest in this dual role. However well-intentioned individual DOE managers may be, a conflict exists between the demands of production and the need to properly safeguard workers' health.

The creation of an independent Advisory Board to the Secretary of Energy will eliminate this conflict. Further, creation of such a Board will reduce the appearance of conflict of interest. The removal of such an appearance will actually benefit DOE and will benefit the competent scientists within DOE. With the Board in place, DOE scientists will be able to undertake science and leave the burden of establishing credibility to others. I should think that scientists within the DOE will welcome the freedom which S.1085 will create.

Mr Chairman, my only specific suggestion in regard to Title IV is in Section 403(a)(2)(B) (on page 23) that you add the Director of the National Institute of Environmental Health Sciences (NIEHS) to the list of persons with whom the Secretary of Health and Human Services shall consult in formulating the membership of the Board.

In conclusion, Mr. Chairman, I would like to reiterate my strong support for S.1085. I shall be pleased to answer any questions which you or the Members of the Committee might have.

Thank you.

June, 1987

CURRICULUM VITAE

Name : Philip J. Landrigan, M.D., M.Sc., D.I.H.

Born : Boston, Massachusetts, June 14, 1942

Wife : Mary Florence

Children: Mary Frances
Christopher Paul
Elizabeth Marie

Education:

High School:	Boston Latin School, 1959
College:	Boston College, A.B., Magna Cum Laude, 1963
Medical School:	Harvard - M.D., 1967
Internship:	Cleveland Metropolitan General Hospital, 1967-1968
Residency:	Children's Hospital Medical Center, Boston, (Pediatrics), 1968-1970
Post Graduate:	London School of Hygiene and Tropical Medicine, 1976-77 Diploma of Industrial Health (England) - 1977 Master of Science in Occupational Medicine, University of London (with distinction) - 1977

Positions Held:

Professor of Community Medicine and Director, Division of Environmental and Occupational Medicine, Department of Community Medicine, Mount Sinai School of Medicine, 1985 - Present.

Professor of Pediatrics, Mount Sinai School of Medicine, 1985 - Present.

Director, Division of Surveillance, Hazard Evaluations and Field Studies, National Institute for Occupational Safety and Health, Centers for Disease Control, 1979 - 1985.

Chief, Environmental Hazards Activity, Cancer and Birth Defects Division, Bureau of Epidemiology, Centers for Disease Control, 1974-79.

Director, Research and Development, Bureau of Smallpox Eradication, Centers for Disease Control, 1973-74.

Epidemic Intelligence Service (EIS) Officer: Centers for Disease Control, 1970-73.

Adjunct Positions:

Teaching Fellow in Pediatrics: Harvard Medical School, 1969 - 1970.

Clinical Instructor in Pediatrics: Emory University School of Medicine, 1970-71.

Visiting Fellow, TUC Institute of Occupational Health, London School of Hygiene and Tropical Medicine, 1976-77.

Adjunct Positions (continued):

Assistant Clinical Professor of Environmental Health,
Department of Environmental Health, College of Medicine,
University of Cincinnati, 1981 - 1986.
Visiting Lecturer on Occupational Health, Harvard School of Public Health, 1981 - Present.
Visiting Lecturer on Preventive Medicine and Clinical Epidemiology, Harvard Medical School, 1982 - Present.
Clinical Professor of Environmental Health,
School of Public Health and Community Medicine,
University of Washington, 1983 - Present.

Memberships:

Fellow, American Academy of Pediatrics
Member, American Association for the Advancement of Science
Member, Society for Epidemiologic Research
Member, American Public Health Association
Elected Fellow, Royal Society of Medicine
Member, Permanent Commission & International Association on Occupational Health, Scientific Committee on Epidemiology
Member, American Academy of Clinical Toxicology
Fellow, American College of Epidemiology
Elected Member, American Epidemiological Society
Fellow, Collegium Ramazzini
Member, Hermann Biggs Society
Member, New York Academy of Sciences
Member, American Academy of Occupational Medicine
Member, New York Occupational Medicine Association
Elected Member, Institute of Medicine, U.S. National Academy of Sciences

Specialty Certifications:

American Board of Pediatrics - 1973
American Board of Preventive Medicine:
General Preventive Medicine - 1979
Occupational Medicine - 1983

Awards and Honors:

Department of Health, Education and Welfare - Volunteer Award 1973
U.S. Public Health Service, Career Development Award - 1976
Centers for Disease Control, Group Citation as Member of Beryllium Review Panel - 1978
U.S. Public Health Service, Meritorious Service Medal - 1985

Committees:

American Academy of Pediatrics - Committee on Environmental Hazards, Liaison Member, 1976-1983; Chairman, 1983 - Present.
National Research Council, National Academy of Sciences, Assembly of Life Sciences. Board on Toxicology and Environmental Health Hazards - 1978 - Present; Vice-Chairman - 1981 - Present.

Committees (continued):

National Research Council, National Academy of Sciences, Assembly of Life Sciences, 1981-1982; Commission on Life Sciences, 1982 - Present.
National Research Council, Institute of Medicine, Committee for a Planning Study for an Ongoing Study of Costs of Environment-related Health Effects, 1979 - 1980.
National Research Council, National Academy of Sciences, Assembly of Life Sciences. Panel on the Proposed Air Force Study of Herbicide Orange, 1979 - 1980.
National Research Council, National Academy of Sciences: Committee on the Epidemiology of Air Pollutants, Vice-Chairman, 1984 - 1985.
Governor's Blue Ribbon Committee on the Love Canal, 1978 - 1979.
Harvard School of Public Health, Occupational Health Program, Residency Review Committee, 1981 - 1983; Chairman, 1981.
World Health Organization. Contributor to the WHO Publication: Guidelines on Studies in Environmental Epidemiology (Environmental Health Criteria #27), 1984.
International Agency for Research on Cancer, Working Groups on Cancer Assessment, October, 1981 and June 1986. (IARC Monographs #29 and #42).
City of Cincinnati, Right-to-Know Ordinance Technical Advisory Committee, 1983 - 1985.
National Institute of Environmental of Health Sciences, Third Task Force for Research Planning in the Environmental Health Sciences. Chairman, Subtask Force on Research Strategies for Prevention of and Intervention in Environmentally Produced Disease, 1983 - 1984.
University of Washington: Ruston/Vashon Island Environmental Pathway Study Review Committee, 1984.
Greater Cincinnati Occupational Health Center, Inc.: Board of Directors, 1983 - 1984.
National Institutes of Health, Study Section on Epidemiology and Disease Control, 1986 - present.
Minnesota Department of Health, Range Studies Advisory Committee, 1985.
Associated University Programs in Occupational Health and Safety, 1985 - Present. President, 1986 - 1987.
New York Lung Association: Research and Scientific Advisory Committee, 1986 - Present.
Mount Sinai School of Medicine: Clinical Research Center Advisory Committee, 1986 - Present.
Milbank Memorial Foundation: Technical Board, 1986 - Present.

Editorial Boards:

Consulting Editor: American Journal of Industrial Medicine, 1979 - Present.
Associate Section Editor for Environmental Epidemiology: Journal of Environmental Pathology and Toxicology, 1980 - Present.
Consulting Editor: Archives of Environmental Health, 1982 - Present.
Editorial Board: Annual Review of Public Health, 1984 - Present.
Senior Editor: Environmental Research, 1985 - Present.

TESTIMONY OF

JAMES M. MELIUS, M.D., DR.P.H.

My name is Dr. James M. Melius. For the past seven years, I have worked at the National Institute for Occupational Safety and Health (NIOSH), most recently as Director of the Division of Surveillance, Hazard Evaluations, and Field Studies. I have just left NIOSH to accept a position with the Division of Environmental Health Assessment of the New York State Department of Health. The testimony which I am presenting today represents my personal views and not those of the New York State Department of Health.

First, I would like to indicate my strong support of S. 1085, the "Nuclear Protections and Safety Act of 1987". Independent oversight over environmental and occupational safety matters at Department of Energy facilities is badly eded. This bill provides appropriate mechanisms for providing that oversight without unnecessarily disrupting the important work done at these facilities. Based on my experience as an occupational physician and epidemiologist and on my work at NIOSH, I would like to direct my testimony at two specific sections of the legislation, Title II - Application of OSHA and NIOSH to DOE Nuclear Facilties and Title IV - Radiation Study Advisory Board Act of 1987.

Title II would essentially extend many of the provisions of the Occupational Safety and Health Act of 1970 to include DOE facilties. The Department of Labor would promulgate regulations governing the application of the act to DOE acilties which would allow any special circumstances regarding these facilitites to be considered. Until then, current Occupational Safety and Health Administration (OSHA) safety and health standards would apply to DOE facilties. OSHA inspectors would be able to evaluate DOE facilties to ensure

compliance with these standards. Employees at these facilities would be able to request inspections if they believe that standards are not being met. In addition, NIOSH investigators would also have access to DOE facilties for the evaluation of possible occupational health problems. This would allow the independent investigation of potential occupational disease problems among the workers at these facilties.

This extension of the Occupational Safety and Health Act to DOE facilties would provide these workers with the same oversight and protection as most other workers in the United States currently have in their workplaces. At the same time, the proposed legislation would recognize the special nature of these facilities by providing for appropriate security measures and for seperate regulations governing the application of the Occupational Safety and Health Act to these facilities. DOE would maintain their current specialized research and monitoring programs. For exposures or situations not covered by OSHA, DOE should continue to develop and apply their own operating procedures or standards. The current DOE commitment and resources devoted to occupational safety and health would be maintained; OSHA and NIOSH would provide independent oversight over this aspect of DOE operations.

Both OSHA and NIOSH have extensive experience in regulating and evaluating occupational safety and health conditions. Although there are some specialized or unique operations at the DOE facilities, I am confident that investigators from NIOSH or OSHA have the experience and capability to appropriately monitor occupational health and safety matters involving these facilities. OSHA operates a field team in Salt Lake City for the evaluation of special occupational health or safety situations throughout the country. NIOSH has conducted several research studies at nuclear facilities and has experienced epidemiologists, physicians, industrial hygienists, and health

physicists who are highly capable of performing evaluations at these facilities. It is important to note that NIOSH and OSHA oversight would not replace current DOE occupational safety and health efforts, but rather would ıpplement those efforts through independent evaluation and monitoring.

The major justification for this change is not necessarily statistical counts of death and disability among DOE employees. Occupational diseases and deaths are certainly occurring among these workers. However, the extent of this problem is difficult to estimate without intensive study of these facilities. For many of the exposures at these facilties, occupationally related diseases may not be evident for many years and would require specialized studies to be evaluated. For example, a few years ago, workers at a DOE facility in Tennessee became concerned about possible effects from their exposures to mercury in the 1950's and 1960's in one area of this facility. An extensive ..edical evaluation conducted by the University of Michigan (under contract to DOE and with oversight by NIOSH) found evidence of neurological damage from mercury exposure among some of these exposed workers approximately thirty years after their last significant exposure to mercury. Specialized neurological testing was necessary to detect these problems which would not be readily diagnosed as part of routine medical care. However, earlier evaluation of these workers might have detected more widespread and more significant effects on their health.

The most important justification for this legislation is to provide a credible ·ocess for oversight of occupational safety and health matters at these facilities. Applying OSHA standards would help to ensure that DOE workers have the same protection as other workers in the United States. Access for NIOSH and OSHA investigators to these facilities would help to ensure that appropriate protection is being provided for these workers. Granting this

access through law and regulation helps to assure DOE employees that any oversight or review by these agencies can take place without inteference from DOE. Recently, DOE officials have cooperated when NIOSH has been requested by DOE employees to investigate occupational health problems at these facilities. However, because NIOSH does not have "legal" access to these facilities, each step in the evaluation must be "negotiated" with DOE. This process can often take several months and can give the appearance that DOE is attempting to stall or impede the outside evaluation. For example, when NIOSH was requested to evaluate conditions at the DOE facility in Fernald, Ohio, an initial step of that investigation required the review of medical records of Fernald workers. This required that DOE publish a Privacy Act notice in the Federal Register giving NIOSH access to these records. NIOSH requested this information in October, 1983. The Federal Register notice was first published in November, 1984. This long delay occurred despite repeated assurances from DOE officials that they were trying to "expedite" the process. This type of delay was very disconcerting to the workers requesting the evaluation and undermined the credibility of DOE cooperation and the credibility of the independent evaluation by NIOSH. Regulations developed under this proposed legislation could readily address this problem.

Most importantly, workers at DOE facilities would have legislated access to an independent evaluation of any perceived occupational health or safety problem in their workplace. The evaluation of these problems would no longer be limited to the agency controlling production and operations at this facility. As DOE continues to work to improve conditions at these facilities, the workers will have confidence that these conditions (and improvements) can be monitored by an independent group.

Title IV, the "Radiation Study Advisory Committee Act of 1987", would establish a federal advisory committee to assist the Secretery of Energy in conducting epidemiological studies of the health effects from exposure to diation. This advisory committee would include experts in epidemiology and public health. Eight of the members would be appointed by the Secretary of Health and Human Services. Two would be appointed by the Secretary of Labor, and one by the Secretary of Energy. This Board would review proposed epidmiological studies involving the expenditure of over $100,000 and all ongoing studies meeting this criterion in order to advise the Secretary of Energy on the scientific and public health value of these studies and on the direction of future studies. The Board will also help to ensure that appropriate peer review of these studies is followed.

The establishment of this Board will help reassure the workers at DOE facilities and the public that DOE is conducting sound and appropriate epidemiological studies of the health effects from exposure to radiation. The study of radiation is a very controversial area. The control of research in this area by an agency viewed as a leading proponent of the use of nuclear power raises concerns about the credibility of the research conducted by this agency. Establishing an independent advisory board to oversee this DOE research will help to overcome this credibility question. Many federal research agencies use advisory boards to help assure that high quality reserach is being conducted within the agency. For example, NIOSH and NCI have established such boards. This proposed Radiation Research Review Board long with an effective peer review system can help ensure that DOE research is sound and properly directed.

In summary, this proposed legislation provides an appropriate mechanism for providing oversight for occupational safety and health conditions at DOE nuclear facilities and related research without inappropriately intefering th operations at these facilities. Most importantly, workers at these facilities will have the benefit of credible and independent review of working conditions resulting, hopefully, in a safer workplace.

STATEMENT OF FRANK WHITE
DEPUTY ASSISTANT SECRETARY FOR
OCCUPATIONAL SAFETY AND HEALTH
BEFORE THE
COMMITTEE ON GOVERNMENTAL AFFAIRS
UNITED STATES SENATE

June 17, 1987

Mr. Chairman and Members of the Committee:

I am pleased to appear here today on behalf of the Occupational Safety and Health Administration (OSHA) to testify on Title II of S. 1085: "Application of OSHA and NIOSH to DOE Nuclear Facilities."

I believe it would be useful, first, to describe the operation of section 4(b)(1) of the Occupational Safety and Health Act (OSH Act), which governs OSHA's jurisdictional relationship with other federal agencies with safety and health responsibilities, to define that relationship as it concerns Department of Energy (DOE) responsibilities over that agency's owned and leased nuclear facilities, and to describe OSHA's working relationship with DOE.

Section 4(b)(1) of the OSH Act

In framing the OSH Act, Congress intended to afford comprehensive protection to all workers while at the same time avoiding duplication of effort by OSHA and other federal agencies having specialized authority affecting occupational safety and health. To accomplish this, the following provision was included:

> Nothing in this Act shall apply to working conditions of employees with respect to which other Federal agencies, and State agencies acting under section 274 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2021), exercise statutory authority to prescribe or enforce standards or regulations affecting occupational safety or health.

This provision--section 4(b)(1) of the OSH Act--preempts OSHA's authority to regulate job safety and health conditions which are subject to the standards or regulations of another federal agency. When another federal agency exercises statutory authority to prescribe or enforce standards or regulations affecting occupational safety and health, OSHA no longer has jurisdiction.

Delineation of OSHA/DOE Authority

On January 2, 1974, the Chairman of the Atomic Energy Commission (AEC)--the predecessor agency of DOE--sent a letter to the Secretary of Labor asserting that the AEC had exercised its statutory authority under section 161(i)(3) of the Atomic Energy Act of 1954, as amended, to regulate occupational safety and health for contractor employees at government-owned, contractor-operated (GOCO) nuclear facilities.

In a letter of agreement dated February 4, 1974, to the Chairman of the AEC, the Secretary of Labor accepted the AEC's interpretation of the relevant section of the Atomic Energy Act and acknowledged that under the terms of section 4(b)(1) of the OSH Act, the exercise by the AEC of its authority precluded the application of the OSH Act to working conditions of private AEC contractors performing contractual operations in facilities

owned or leased by the AEC. This agreement has formed the basis of OSHA's jurisdictional relationship with the AEC and its successor agency, DOE.

The Department of Energy has adopted all of OSHA's standards. Under its statutory authority, DOE is empowered to conduct inspections, to compel compliance through reliance on contractual obligations, to handle employee complaints and reports of imminent danger, to require that contractors record and report occupational injuries and illnesses, and to undertake a broad range of other actions which parallel OSHA's responsibilities.

OSHA/DOE Working Relationship

While OSHA is precluded from exercising authority in DOE's nuclear facilities, OSHA nonetheless has maintained a close working relationship with the Department of Energy and its predecessor agencies over the years. When on a number of occasions employees at nuclear plants have contacted OSHA about job-related safety and health problems, OSHA has brought the matter to the attention of DOE personnel. In such instances, DOE has sent OSHA a report of the actions taken to safeguard the worksite. From time to time, in the field and at national headquarters, DOE has consulted OSHA on particular problems and OSHA has responded with technical assistance where appropriate.

For example, when DOE asked OSHA for help in 1980 in eliminating hazards associated with mechanical power press brakes at its facility in Oak Ridge, Tennessee, OSHA sent a safety engineer to review DOE's techniques for protecting the

workers who operated the power presses. OSHA made recommendations on basic safeguards, proper operating procedures, and supervisory controls. DOE accepted a number of these recommendations and made alterations to the work environment.

OSHA has also assisted DOE and the contractor, Rockwell International, in their efforts to investigate the accident this winter at the Rocky Flats facility in Colorado. OSHA was informed of the accident on January 15, the day after it occurred. At that time a safety engineer from DOE called OSHA's office in Denver to discuss the accident. Accompanied by officials from Rockwell, DOE safety personnel later met with OSHA officials at the Denver office. OSHA provided information on ways of proceeding with the accident investigation. Subsequently, OSHA staff in Denver held a number of discussions with representatives of the union, Rockwell, and DOE at their request. The OSHA official who provided most of the assistance is a supervisory safety specialist who has had many years experience in electrical work. He advised the company and DOE on their investigation, examined photos of the accident site, and reviewed the accident investigation report when it was completed.

As these examples demonstrate, OSHA is ready to share its technical knowledge and expertise with DOE when requested.

Proposed Legislation

Given the unique expertise of DOE on radiological hazards, the extensive complement of DOE and contractor safety and

health professionals assigned to each DOE nuclear facility, and the comprehensive safety and health program implemented by the Department of Energy at these installations, OSHA sees no need for Title II of the proposed legislation. Certainly, problems may arise from time to time at these workplaces, but we believe that a transfer of authority from DOE to OSHA is not warranted. Indeed, we believe that DOE has acquired valuable experience in the years since we last appeared before this committee on this subject and that, if anything, problems arise less frequently than they did in the past.

While the purpose of Title II is clearly to give OSHA the authority to regulate occupational safety and health at DOE nuclear facilities, Title II as worded is silent on DOE authority to issue and enforce standards on its own, and thus would create a situation in which both DOE and OSHA could regulate the same workplaces. The proposal would thus foster precisely the situation that section 4(b)(1) was designed to avoid--duplication and conflict between federal agencies.

OSHA therefore opposes Title II of the Nuclear Protections and Safety Act of 1987. Authority over occupational safety and health at DOE nuclear facilities was granted to the AEC and its successor agencies for good reason. DOE's preemption of OSHA authority, as intended, has had a number of useful consequences:

-- elimination of wasteful duplication of effort by the two regulatory agencies,

-- avoidance of jurisdictional conflict, and, perhaps most importantly,

-- assignment of responsibility for job safety and health at DOE-owned, contractor-operated nuclear facilities to the agency best-equipped, on the basis of long experience and expertise, to regulate these unique installations and to address radiological hazards.

At the same time, OSHA remains mindful of it mission. Our concern is to assure so far as possible safe and healthful working conditions for every working man and woman in the nation. Our informal contacts with the occupational safety and health program in the nuclear facilities owned and leased by DOE appear to indicate that there are no systemic problems in the program sufficient to warrant a transfer of authority as proposed in Title II of the bill. We stand ready of course to consider any evidence to the contrary.

Beyond these general comments, OSHA has reservations and questions concerning some of the details of Title II of the proposed legislation. We would be happy to discuss these with Committee staff if this is desired.

That concludes my prepared statement, Mr. Chairman. I welcome the Committee's questions.

U.S. Department of Labor

Assistant Secretary for
Occupational Safety and Health
Washington, D.C. 20210

4

The Honorable John Glenn
Chairman
Committee on Governmental Affairs
United States Senate
Washington, D.C. 20510-6250

Dear Mr. Chairman:

Thank your for your letter of June 23 to Deputy Assistant Secretary Frank White in which you request answers to three questions posed by Senator George Mitchell. These questions were submitted as follow-up to a hearing before your Committee on June 17 at which Mr. White testified.

Enclosed are our responses to Senator Mitchell's questions. If you or other members of the Subcommittee have additional questions, please let me know.

Sincerely,

John A. Pendergrass
Assistant Secretary

Enclosures

Responses of the Occupational Safety and Health Administration to Questions from the Senate Committee on Governmental Affairs

QUESTION 1:

In his testimony, Mr. Salgado said that OSHA does not now directly oversee any nuclear facilities.

a) Do OSHA regulations or standards include any related to nuclear materials, production, utilization or worker exposure? Please provide a listing of such regulations or standards for the record.

b) Do OSHA regulations or standards apply in any manner to workers employed at commercial nuclear reactors licensed by the Nuclear Regulatory Commission? If so, please provide an explanation of how those standards or regulations are applied at those facilities.

RESPONSE 1:

a) OSHA has issued two standards specifically related to nuclear materials.

(1) OSHA has a standard which establishes permissible employee exposure limits for airborne concentrations of uranium compounds (29 C.F.R. 1910.1000, Table Z-1). OSHA's limits are based on the toxic effects of these substances rather than their radioactive properties. The limits for occupational exposure to these substances are 0.05 milligrams of soluble uranium compounds per cubic meter of air (0.05 mg/M^3) and 0.25mg/M^3 for insoluble uranium.

(2) The standard for employee exposure to ionizing radiation (29 C.F.R 1910.96) contains a number of protective provisions for issues such as: radiation dose limits, personal monitoring, signs, labels and signals, employee training, notification of incidents, waste disposal, and other requirements. A copy of the OSHA standard for ionizing radiation is attached as Appendix A.

b) At facilities licensed by the Nuclear Regulatory Commission (NRC), including commercial nuclear power plants, OSHA standards apply only to those working conditions which are not addressed in NRC licensing agreements. This limitation on OSHA's enforcement authority is based on section 4(b)(1) of the Occupational Safety and Health Act (OSH Act) which holds that the OSH Act's provisions do not apply to those conditions of employees for which another federal agency or state agency acting under section 274 of the Atomic Energy Act of 1954, as amended, exercises statutory authority to prescribe or enforce standards or regulations affecting occupational safety and health.

Under its licensing authority, NRC regulates all non-military uses of source, byproduct and special nuclear materials. For NRC-licensed radioactive materials, OSHA is prohibited from enforcing its standard for employee exposure to ionizing radiation, which is described in our response to Question 1a). OSHA also is prohibited from enforcing other of its general industry standards to the extent that NRC licensing agreements cover the working condition in question.

For those hazards which are not addressed under NRC's licensing authority, workers at nuclear facilities are afforded the same level of protection under the OSH Act as employees in other industries. OSHA's standards continue to apply to the construction of nuclear plants and to general industry hazards at such facilities, for example, walking-working surfaces and machine guarding.

QUESTION 2:

In your written testimony, you say that DOE has been contacted by OSHA in instances where employees at DOE nuclear plants brought health and safety matters to your agency's attention and that DOE has sent OSHA a report of the actions taken to safeguard the worksite.

a) Please provide for the record a listing of those instances from 1982 to the present time.

b) Have those reports been shared with the individual employees who brought the matters to OSHA's attention originally? If not, please explain why.

RESPONSE 2:

Based on a review of our files, we have identified two instances from 1982 to the present in which OSHA contacted DOE regarding workplace safety and health matters at DOE-covered facilities. These two cases are discussed briefly below.

- On February 21, 1985, OSHA inspected a construction site at the Brookhaven Laboratory in Upton, New York. OSHA issued citations to the employer on February 27, but subsequently withdrew the citations when it was discovered that DOE had jurisdiction over the working conditions at the site. OSHA provided DOE with a copy of its citations, and DOE assured OSHA that it would investigate the matter. Since the OSHA inspection was self-initiated and not the result of an employee complaint, OSHA did not notify workers at the site.

- In early February 1986, the Manager of OSHA's District Office in Las Vegas, Nevada, advised an employee of the Tonopah Test Range to file a complaint with the DOE Safety and Health Director regarding alleged unsafe working conditions at the facility. DOE subsequently provided OSHA with documents regarding DOE's complaint investigation which had uncovered no serious hazards. On June 30, 1986, OSHA wrote to the employee informing him of the discussions with DOE and advising him to contact OSHA about any additional concerns.

On a number of occasions OSHA informally has referred employees to DOE to submit complaints about unsafe working conditions. In such instances, OSHA has offered to address any subsequent concerns the employees may have.

QUESTION 3:

Your testimony discusses (page 4) a meeting OSHA had with DOE and Rockwell following the January 15 accident at Rocky Flats. At that meeting, you say, "OSHA provided information on ways of proceeding with the accident investigation."

a) When did that meeting occur? Were union representatives invited to the meeting?

b) Please provide any notes, memorandum, correspondence or documents developed in relation to that meeting. Were the materials shared with the union representatives? If not, please explain why.

c) Did the OSHA official who provided most of the assistance, and who reviewed the accident investigation report, concur with the report and so notify DOE?

RESPONSE 3:

a) On January 15, 1987, the day after the accident at the Rocky Flats facility, Mr. Gordon Terroux, a safety supervisor in OSHA's Denver Area Office met with Dr. Gary Leitz, a safety engineer from DOE's Rocky Flats Area Office and Dr. Gary L. Potter, a manager for Rockwell International Corporation, which is the DOE contractor at the Rocky Flats facility. At the meeting, DOE requested and received OSHA's guidance on possible causes of the accident and on the or proper procedures for conducting the investigation.

In a follow-up meeting on April 14, Mr. Earl Bean, Chairman of the DOE investigation committee, and Dr. Leitz provided OSHA with the preliminary results of the DOE accident investigation.

Union representatives did not attend either of the meetings, both of which had been called by DOE. We presume that neither DOE nor Rockwell requested their presence.

b) Copies of notes relating to the meetings of January 15 and April 14 are attached as Appendix B. These materials include:

- Informal notes taken by Mr. Terroux during the period of January 15-21. The notes refer briefly to the January 15 meeting with representatives of DOE and Rockwell. The notes also reference conversations with Mr. James Kelly, President of Local 8031, United Steelworkers of America, the office of Congressman Timothy Wirth, the office of the Governor of Colorado, and Mr. Bart Chadwick, the OSHA Regional Administrator in Denver.

- Informal notes taken by Mr. Terroux concerning his April 14 follow-up meeting with DOE officials. The notes provide a summary of the results of DOE's investigation as presented to Mr. Terroux.

OSHA saw no need to provide union representatives with copies of these materials since they were not formal reports or memoranda for the record. They are personal notes, written by Mr. Terroux to assist him recall past events. It should be noted that on several occasions Mr. Terroux informed Mr. Kelly of the Steelworkers union about OSHA's involvement in the case, including information about his two meetings with DOE officials.

We also have attached for your information a copy of a Fatality/Catastrophe Report (OSHA Form 36) of January 15, 1987, regarding the accident at the Rocky Flats facility. OSHA's Denver Area Office compiled the report on the basis of information received by telephone from Mr. Kelly of the Steelworkers local. At the time of the call, OSHA advised Mr. Kelly that the Agency could not investigate the accident because section 4(b)(1) of the OSH Act precluded OSHA's exercise of authority for the working conditions related to the employee fatality at the DOE plant.

c) DOE did not ask OSHA for a formal review of the investigation report, and Mr. Terroux neither concurred nor disagreed with the report's conclusions and findings. OSHA's role in this case was to provide DOE with informal, off-site technical assistance and guidance in the proper conduct of its investigation.

sure of 20 micropascals. Unit: decibels (dB). For use with this regulation, SLOW time response, in accordance with ANSI S1.4-1971 (R1976), is required.

Sound level meter—An instrument for the measurement of sound level.

Time-weighted average sound level—That sound level, which if constant over an 8-hour exposure, would result in the same noise dose as is measured.

(Approved by the Office of Management and Budget under control number 1218-0048)

[39 FR 23502, June 27, 1974, as amended at 46 FR 4161, Jan. 16, 1981; 46 FR 62845, Dec. 29, 1981; 48 FR 9776, Mar. 8, 1983; 48 FR 29687, June 28, 1983]

§ 1910.96 Ionizing radiation.

(a) *Definitions applicable to this section.* (1) "Radiation" includes alpha rays, beta rays, gamma rays, X-rays, neutrons, high-speed electrons, high-speed protons, and other atomic particles; but such term does not include sound or radio waves, or visible light, or infrared or ultraviolet light.

(2) "Radioactive material" means any material which emits, by spontaneous nuclear disintegration, corpuscular or electromagnetic emanations.

(3) "Restricted area" means any area access to which is controlled by the employer for purposes of protection of individuals from exposure to radiation or radioactive materials.

(4) "Unrestricted area" means any area access to which is not controlled by the employer for purposes of protection of individuals from exposure to radiation or radioactive materials.

(5) "Dose" means the quantity of ionizing radiation absorbed, per unit of mass, by the body or by any portion of the body. When the provisions in this section specify a dose during a period of time, the dose is the total quantity of radiation absorbed, per unit of mass, by the body or by any portion of the body during such period of time. Several different units of dose are in current use. Definitions of units used in this section are set forth in paragraphs (a) (6) and (7) of this section.

(6) "Rad" means a measure of the dose of any ionizing radiation to body tissues in terms of the energy absorbed per unit of mass of the tissue. One rad is the dose corresponding to the absorption of 100 ergs per gram of tissue (1 millirad (mrad)=0.001 rad).

(7) "Rem" means a measure of the dose of any ionizing radiation to body tissue in terms of its estimated biological effect relative to a dose of 1 roentgen (r) of X-rays (1 millirem (mrem)=0.001 rem). The relation of the rem to other dose units depends upon the biological effect under consideration and upon the conditions for irradiation. Each of the following is considered to be equivalent to a dose of 1 rem:

(i) A dose of 1 roentgen due to X- or gamma radiation;

(ii) A dose of 1 rad due to X-, gamma, or beta radiation;

(iii) A dose of 0.1 rad due to neutrons or high energy protons;

(iv) A dose of 0.05 rad due to particles heavier than protons and with sufficient energy to reach the lens of the eye;

(v) If it is more convenient to measure the neutron flux, or equivalent, than to determine the neutron dose in rads, as provided in subdivision (iii) of this subparagraph, 1 rem of neutron radiation may, for purposes of the provisions in this section be assumed to be equivalent to 14 million neutrons per square centimeter incident upon the body; or, if there is sufficient information to estimate with reasonable accuracy the approximate distribution in energy of the neutrons, the incident number of neutrons per square centimeter equivalent to 1 rem may be estimated from Table G-17:

TABLE G-17—NEUTRON FLUX DOSE EQUIVALENTS

Neutron energy (million electron volts (Mev))	Number of neutrons per square centimeter equivalent to a dose of 1 rem (neutrons/cm²)	Average flux to deliver 100 millirem in 40 hours (neutrons/cm² per sec.)
Thermal	970 × 10⁶	670
0.0001	720 × 10⁶	500
0.005	820 × 10⁶	570
0.02	400 × 10⁶	280
0.1	120 × 10⁶	80
0.5	43 × 10⁶	30
1.0	26 × 10⁶	18
2.5	29 × 10⁶	20
5.0	26 × 10⁶	18
7.5	24 × 10⁶	17

TABLE G-17—NEUTRON FLUX DOSE EQUIVALENTS—Continued

Neutron energy (million electron volts (Mev))	Number of neutrons per square centimeter equivalent to a dose of 1 rem (neutrons/cm²)	Average flux to deliver 100 millirem in 40 hours (neutrons/cm² per sec.)
10	24×10^6	17
10 to 30	14×10^6	10

(8) For determining exposures to X- or gamma rays up to 3 Mev., the dose limits specified in this section may be assumed to be equivalent to the "air dose". For the purpose of this section "air dose" means that the dose is measured by a properly calibrated appropriate instrument in air at or near the body surface in the region of the highest dosage rate.

(b) *Exposure of individuals to radiation in restricted areas.* (1) Except as provided in paragraph (b)(2) of this section, no employer shall possess, use, or transfer sources of ionizing radiation in such a manner as to cause any individual in a restricted area to receive in any period of one calendar quarter from sources in the employer's possession or control a dose in excess of the limits specified in Table G-18:

TABLE G-18

	Rems per calendar quarter
Whole body: Head and trunk; active blood-forming organs; lens of eyes; or gonads	1¼
Hands and forearms; feet and ankles	8¾
Skin of whole body	⅛

(2) An employer may permit an individual in a restricted area to receive doses to the whole body greater than those permitted under subparagraph (1) of this paragraph, so long as:

(i) During any calendar quarter the dose to the whole body shall not exceed 3 rems; and

(ii) The dose to the whole body, when added to the accumulated occupational dose to the whole body, shall not exceed 5 (N-18) rems, where "N" equals the individual's age in years at his last birthday; and

(iii) The employer maintains adequate past and current exposure records which show that the addition of such a dose will not cause the individual to exceed the amount authorized in this subparagraph. As used in this subparagraph "Dose to the whole body" shall be deemed to include any dose to the whole body, gonad, active bloodforming organs, head and trunk, or lens of the eye.

(3) No employer shall permit any employee who is under 18 years of age to receive in any period of one calendar quarter a dose in excess of 10 percent of the limits specified in Table G-18.

(4) "Calendar quarter" means any 3-month period determined as follows:

(i) The first period of any year may begin on any date in January: *Provided,* That the second, third, and fourth periods accordingly begin on the same date in April, July, and October, respectively, and that the fourth period extends into January of the succeeding year, if necessary to complete a 3-month quarter. During the first year of use of this method of determination, the first period for that year shall also include any additional days in January preceding the starting date for the first period; or

(ii) The first period in a calendar year of 13 complete, consecutive calendar weeks; the second period in a calendar year of 13 complete, consecutive weeks; the third period in a calendar year of 13 complete, consecutive calendar weeks; the fourth period in a calendar year of 13 complete, consecutive calendar weeks. If at the end of a calendar year there are any days not falling within a complete calendar week of that year, such days shall be included within the last complete calendar week of that year. If at the beginning of any calendar year there are days not falling within a complete calendar week of that year, such days shall be included within the last complete calendar week of the previous year; or

(iii) The four periods in a calendar year may consist of the first 14 complete, consecutive calendar weeks; the next 12 complete, consecutive calendar weeks, the next 14 complete, consecutive calendar weeks, and the last 12 complete, consecutive calendar weeks.

If at the end of a calendar year there are any days not falling within a complete calendar week of that year, such days shall be included (for purposes of this section) within the last complete calendar week of the year. If at the beginning of any calendar year there are days not falling within a complete calendar week of that year, such days shall be included (for purposes of this section) within the last complete week of the previous year.

(c) *Exposure to airborne radioactive material.* (1) No employer shall possess, use or transport radioactive material in such a manner as to cause any employee, within a restricted area, to be exposed to airborne radioactive material in an average concentration in excess of the limits specified in Table 1 of Appendix B to 10 CFR Part 20. The limits given in Table 1 are for exposure to the concentrations specified for 40 hours in any workweek of 7 consecutive days. In any such period where the number of hours of exposure is less than 40, the limits specified in the table may be increased proportionately. In any such period where the number of hours of exposure is greater than 40, the limits specified in the table shall be decreased proportionately.

(2) No employer shall possess, use, or transfer radioactive material in such a manner as to cause any individual within a restricted area, who is under 18 years of age, to be exposed to airborne radioactive material in an average concentration in excess of the limits specified in Table II of Appendix B to 10 CFR Part 20. For purposes of this paragraph, concentrations may be averaged over periods not greater than 1 week.

(3) "Exposed" as used in this paragraph means that the individual is present in an airborne concentration. No allowance shall be made for the use of protective clothing or equipment, or particle size.

(d) *Precautionary procedures and personal monitoring.* (1) Every employer shall make such surveys as may be necessary for him to comply with the provisions in this section. "Survey" means an evaluation of the radiation hazards incident to the production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions. When appropriate, such evaluation includes a physical survey of the location of materials and equipment, and measurements of levels of radiation or concentrations of radioactive material present.

(2) Every employer shall supply appropriate personnel monitoring equipment, such as film badges, pocket chambers, pocket dosimeters, or film rings, and shall require the use of such equipment by:

(i) Each employee who enters a restricted area under such circumstances that he receives, or is likely to receive, a dose in any calendar quarter in excess of 25 percent of the applicable value specified in paragraph (b)(1) of this section; and

(ii) Each employee under 18 years of age who enters a restricted area under such circumstances that he receives, or is likely to receive, a dose in any calendar quarter in excess of 5 percent of the applicable value specified in paragraph (b)(1) of this section; and

(iii) Each employee who enters a high radiation area.

(3) As used in this section:

(i) "Personnel monitoring equipment" means devices designed to be worn or carried by an individual for the purpose of measuring the dose received (e.g., film badges, pocket chambers, pocket dosimeters, film rings, etc.);

(ii) "Radiation area" means any area, accessible to personnel, in which there exists radiation at such levels that a major portion of the body could receive in any 1 hour a dose in excess of 5 millirem, or in any 5 consecutive days a dose in excess of 100 millirem; and

(iii) "High radiation area" means any area, accessible to personnel, in which there exists radiation at such levels that a major portion of the body could receive in any one hour a dose in excess of 100 millirem.

(e) *Caution signs, labels, and signals*—(1) *General.* (i) Symbols prescribed by this paragraph shall use the conventional radiation caution colors (magenta or purple on yellow background). The symbol prescribed by

this paragraph is the conventional three-bladed design:

RADIATION SYMBOL

1. Cross-hatched area is to be magenta or purple.
2. Background is to be yellow.

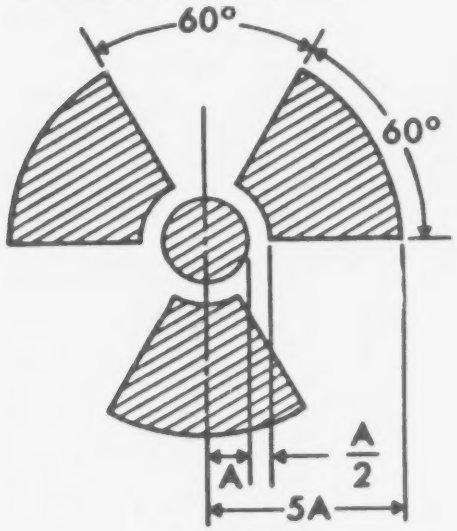

FIGURE G-10

(2) *Radiation area.* Each radiation area shall be conspicuously posted with a sign or signs bearing the radiation caution symbol described in subparagraph (1) of this paragraph and the words:

CAUTION

RADIATION AREA

(3) *High radiation area.* (i) Each high radiation area shall be conspicuously posted with a sign or signs bearing the radiation caution symbol and the words:

CAUTION

HIGH RADIATION AREA

(ii) Each high radiation area shall be equipped with a control device which shall either cause the level of radiation to be reduced below that at which an individual might receive a dose of 100 millirems in 1 hour upon entry into the area or shall energize a conspicuous visible or audible alarm signal in such a manner that the individual entering and the employer or a supervisor of the activity are made aware of the entry. In the case of a high radiation area established for a period of 30 days or less, such control device is not required.

(4) *Airborne radioactivity area.* (i) As used in the provisions of this section, "airborne radioactivity area" means:

(*a*) Any room, enclosure, or operating area in which airborne radioactive materials, composed wholly or partly of radioactive material, exist in concentrations in excess of the amounts specified in column 1 of Table 1 of Appendix B to 10 CFR Part 20 or

(*b*) Any room, enclosure, or operating area in which airborne radioactive materials exist in concentrations which, averaged over the number of hours in any week during which individuals are in the area, exceed 25 percent of the amounts specified in column 1 of Table 1 of Appendix B to 10 CFR Part 20.

(ii) Each airborne radioactivity area shall be conspicuously posted with a sign or signs bearing the radiation caution symbol described in paragraph (e)(1) of this section and the words:

CAUTION

AIRBORNE RADIOACTIVITY AREA

(5) *Additional requirements.*

(i) Each area or room in which radioactive material is used or stored and which contains any radioactive material (other than natural uranium or thorium) in any amount exceeding 10 times the quantity of such material specified in Appendix C to 10 CFR Part 20 shall be conspicuously posted with a sign or signs bearing the radiation caution symbol described in paragraph (e)(1) of this section and the words:

CAUTION

RADIOACTIVE MATERIALS

(ii) Each area or room in which natural uranium or thorium is used or stored in an amount exceeding 100 times the quantity of such material specified in 10 CFR Part 20 shall be conspicuously posted with a sign or signs bearing the radiation caution symbol described in paragraph (e)(1) of this section and the words:

CAUTION

RADIOACTIVE MATERIALS

(6) *Containers.* (i) Each container in which is transported, stored, or used a quantity of any radioactive material (other than natural uranium or thorium) greater than the quantity of such material specified in Appendix C to 10 CFR Part 20 shall bear a durable, clearly visible label bearing the radiation caution symbol described in paragraph (e)(1) of this section and the words:

CAUTION

RADIOACTIVE MATERIALS

(ii) Each container in which natural uranium or thorium is transported, stored, or used in a quantity greater than 10 times the quantity specified in Appendix C to 10 CFR Part 20 shall bear a durable, clearly visible label bearing the radiation caution symbol described in paragraph (e)(1) of this section and the words:

CAUTION

RADIOACTIVE MATERIALS

(iii) Notwithstanding the provisions of paragraphs (e)(6) (i) and (ii) of this section a label shall not be required:

(*a*) If the concentration of the material in the container does not exceed that specified in column 2 of Table 1 of Appendix B to 10 CFR Part 20, or

(*b*) For laboratory containers, such as beakers, flasks, and test tubes, used transiently in laboratory procedures, when the user is present.

(iv) Where containers are used for storage, the labels required in this subparagraph shall state also the quantities and kinds of radioactive materials in the containers and the date of measurement of the quantities.

(f) *Immediate evacuation warning signal*—(1) *Signal characteristics.* (i) The signal shall be a midfrequency complex sound wave amplitude modulated at a subsonic frequency. The complex sound wave in free space shall have a fundamental frequency (f_1) between 450 and 500 hertz (Hz) modulated at a subsonic rate between 4 and 5 hertz.

(ii) The signal generator shall not be less than 75 decibels at every location where an individual may be present whose immediate, rapid, and complete evacuation is essential.

(iii) A sufficient number of signal units shall be installed such that the requirements of paragraph (f)(1)(ii) of this section are met at every location where an individual may be present whose immediate, rapid, and complete evacuation is essential.

(iv) The signal shall be unique in the plant or facility in which it is installed.

(v) The minimum duration of the signal shall be sufficient to insure that all affected persons hear the signal.

(vi) The signal-generating system shall respond automatically to an initiating event without requiring any human action to sound the signal.

(2) *Design objectives.* (i) The signal-generating system shall be designed to incorporate components which enable the system to produce the desired signal each time it is activated within one-half second of activation.

(ii) The signal-generating system shall be provided with an automatically activated secondary power supply which is adequate to simultaneously power all emergency equipment to which it is connected, if operation during power failure is necessary, except in those systems using batteries as the primary source of power.

(iii) All components of the signal-generating system shall be located to provide maximum practicable protection against damage in case of fire, explosion, corrosive atmosphere, or other environmental extremes consistent with adequate system performance.

(iv) The signal-generating system shall be designed with the minimum number of components necessary to make it function as intended, and should utilize components which do not require frequent servicing such as lubrication or cleaning.

(v) Where several activating devices feed activating information to a central signal generator, failure of any activating device shall not render the signal-generator system inoperable to activating information from the remaining devices.

(vi) The signal-generating system shall be designed to enhance the probability that alarm occurs only when

immediate evacuation is warranted. The number of false alarms shall not be so great that the signal will come to be disregarded and shall be low enough to minimize personal injuries or excessive property damage that might result from such evacuation.

(3) *Testing.* (i) Initial tests, inspections, and checks of the signal-generating system shall be made to verify that the fabrication and installation were made in accordance with design plans and specifications and to develop a thorough knowledge of the performance of the system and all components under normal and hostile conditions.

(ii) Once the system has been placed in service, periodic tests, inspections, and checks shall be made to minimize the possibility of malfunction.

(iii) Following significant alterations or revisions to the system, tests and checks similar to the initial installation tests shall be made.

(iv) Tests shall be designed to minimize hazards while conducting the tests.

(v) Prior to normal operation the signal-generating system shall be checked physically and functionally to assure reliability and to demonstrate accuracy and performance. Specific tests shall include:

(*a*) All power sources.

(*b*) Calibration and calibration stability.

(*c*) Trip levels and stability.

(*d*) Continuity of function with loss and return of required services such as AC or DC power, air pressure, etc.

(*e*) All indicators.

(*f*) Trouble indicator circuits and signals, where used.

(*g*) Air pressure (if used)

(*h*) Determine that sound level of the signal is within the limit of paragraph (f)(1)(ii) of this section at all points that require immediate evacuation.

(vi) In addition to the initial startup and operating tests, periodic scheduled performance tests and status checks must be made to insure that the system is at all times operating within design limits and capable of the required response. Specific periodic tests or checks or both shall include:

(*a*) Adequacy of signal activation device.

(*b*) All power sources.

(*c*) Function of all alarm circuits and trouble indicator circuits including trip levels.

(*d*) Air pressure (if used).

(*e*) Function of entire system including operation without power where required.

(*f*) Complete operational tests including sounding of the signal and determination that sound levels are adequate.

(vii) Periodic tests shall be scheduled on the basis of need, experience, difficulty, and disruption of operations. The entire system should be operationally tested at least quarterly.

(viii) All employees whose work may necessitate their presence in an area covered by the signal shall be made familiar with the actual sound of the signal—preferably as it sounds at their work location. Before placing the system into operation, all employees normally working in the area shall be made acquainted with the signal by actual demonstration at their work locations.

(g) *Exceptions from posting requirements.* Notwithstanding the provisions of paragraph (e) of this section:

(1) A room or area is not required to be posted with a caution sign because of the presence of a sealed source, provided the radiation level 12 inches from the surface of the source container or housing does not exceed 5 millirem per hour.

(2) Rooms or other areas in onsite medical facilities are not required to be posted with caution signs because of the presence of patients containing radioactive material, provided that there are personnel in attendance who shall take the precautions necessary to prevent the exposure of any individual to radiation or radioactive material in excess of the limits established in the provisions of this section.

(3) Caution signs are not required to be posted at areas or rooms containing radioactive materials for periods of less than 8 hours: *Provided, That*

(i) The materials are constantly attended during such periods by an individual who shall take the precautions necessary to prevent the exposure of any individual to radiation or radioactive materials in excess of the limits

established in the provisions of this section; and

(ii) Such area or room is subject to the employer's control.

(h) *Exemptions for radioactive materials packaged for shipment.* Radioactive materials packaged and labeled in accordance with regulations of the Department of Transportation published in 49 CFR Chapter I, are exempt from the labeling and posting requirements of this subpart during shipment, provided that the inside containers are labeled in accordance with the provisions of paragraph (e) of this section.

(i) *Instruction of personnel, posting.* (1) Employers regulated by the Atomic Energy Commission shall be governed by 10 CFR Part 20 standards. Employers in a State named in paragraph (p)(3) of this section shall be governed by the requirements of the laws and regulations of that State. All other employers shall be regulated by the following:

(2) All individuals working in or frequenting any portion of a radiation area shall be informed of the occurrence of radioactive materials or of radiation in such portions of the radiation area; shall be instructed in the safety problems associated with exposure to such materials or radiation and in precautions or devices to minimize exposure; shall be instructed in the applicable provisions of this section for the protection of employees from exposure to radiation or radioactive materials; and shall be advised of reports of radiation exposure which employees may request pursuant to the regulations in this section.

(3) Each employer to whom this section applies shall post a current copy of its provisions and a copy of the operating procedures applicable to the work conspicuously in such locations as to insure that employees working in or frequenting radiation areas will observe these documents on the way to and from their place of employment, or shall keep such documents available for examination of employees upon request.

(j) *Storage of radioactive materials.* Radioactive materials stored in a nonradiation area shall be secured against unauthorized removal from the place of storage.

(k) *Waste disposal.* No employer shall dispose of radioactive material except by transfer to an authorized recipient, or in a manner approved by the Atomic Energy Commission or a State named in paragraph (p)(3) of this section.

(l) *Notification of incidents*—(1) *Immediate notification.* Each employer shall immediately notify the Assistant Secretary of Labor or his duly authorized representative, for employees not protected by the Atomic Energy Commission by means of 10 CFR Part 20; paragraph (p)(2) of this section, or the requirements of the laws and regulations of States named in paragraph (p)(3) of this section, by telephone or telegraph of any incident involving radiation which may have caused or threatens to cause:

(i) Exposure of the whole body of any individual to 25 rems or more of radiation; exposure of the skin of the whole body of any individual to 150 rems or more of radiation; or exposure of the feet, ankles, hands, or forearms of any individual to 375 rems or more of radiation; or

(ii) The release of radioactive material in concentrations which, if averaged over a period of 24 hours, would exceed 5,000 times the limit specified for such materials in Table II of Appendix B to 10 CFR Part 20.

(2) *Twenty-four hour notification.* Each employer shall within 24 hours following its occurrence notify the Assistant Secretary of Labor or his duly authorized representative for employees not protected by the Atomic Energy Commission by means of 10 CFR Part 20; paragraph (p)(2) of this section, or the requirements of the laws and applicable regulations of States named in paragraph (p)(3) of this section, by telephone or telegraph of any incident involving radiation which may have caused or threatens to cause:

(i) Exposure of the whole body of any individual to 5 rems or more of radiation; exposure of the skin of the whole body of any individual to 30 rems or more of radiation; or exposure of the feet, ankles, hands, or forearms to 75 rems or more of radiation; or

(m) *Reports of overexposure and excessive levels and concentrations.* (1) In addition to any notification required by paragraph (l) of this section each employer shall make a report in writing within 30 days to the Assistant Secretary of Labor or his duly authorized representative, for employees not protected by the Atomic Energy Commission by means of 10 CFR Part 20; or under paragraph (p)(2) of this section, or the requirements of the laws and regulations of States named in paragraph (p)(3) of this section, of each exposure of an individual to radiation or concentrations of radioactive material in excess of any applicable limit in this section. Each report required under this paragraph shall describe the extent of exposure of persons to radiation or to radioactive material; levels of radiation and concentration of radioactive material involved, the cause of the exposure, levels of concentrations; and corrective steps taken or planned to assure against a recurrence.

(2) In any case where an employer is required pursuant to the provisions of this paragraph to report to the U.S. Department of Labor any exposure of an individual to radiation or to concentrations of radioactive material, the employer shall also notify such individual of the nature and extent of exposure. Such notice shall be in writing and shall contain the following statement: "You should preserve this report for future reference."

(n) *Records.* (1) Every employer shall maintain records of the radiation exposure of all employees for whom personnel monitoring is required under paragraph (d) of this section and advise each of his employees of his individual exposure on at least an annual basis.

(2) Every employer shall maintain records in the same units used in tables in paragraph (b) of this section and Appendix B to 10 CFR Part 20.

(o) *Disclosure to former employee of individual employee's record.* (1) At the request of a former employee an employer shall furnish to the employee a report of the employee's exposure to radiation as shown in records maintained by the employer pursuant to paragraph (n)(1) of this section. Such report shall be furnished within 30 days from the time the request is made, and shall cover each calendar quarter of the individual's employment involving exposure to radiation or such lesser period as may be requested by the employee. The report shall also include the results of any calculations and analysis of radioactive material deposited in the body of the employee. The report shall be in writing and contain the following statement: "You should preserve this report for future reference."

(p) *Atomic Energy Commission licensees—AEC contractors operating AEC plants and facilities—AEC Agreement State licensees or registrants.* (1) Any employer who possesses or uses source material, byproduct material, or special nuclear material, as defined in the Atomic Energy Act of 1954, as amended, under a license issued by the Atomic Energy Commission and in accordance with the requirements of 10 CFR Part 20 shall be deemed to be in compliance with the requirements of this section with respect to such possession and use.

(2) AEC contractors operating AEC plants and facilities: Any employer who possesses or uses source material, byproduct material, special nuclear material, or other radiation sources under a contract with the Atomic Energy Commission for the operation of AEC plants and facilities and in accordance with the standards, procedures, and other requirements for radiation protection established by the Commission for such contract pursuant to the Atomic Energy Act of 1954 as amended (42 U.S.C. 2011 et seq.), shall be deemed to be in compliance with the requirements of this section with respect to such possession and use.

(3) AEC-agreement State licensees or registrants:

(i) *Atomic Energy Act sources.* Any employer who possesses or uses source material, byproduct material, or special nuclear material, as defined in the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.), and has either registered such sources with, or is operating under a license issued by, a State which has an agreement in effect with the Atomic Energy Com-

mission pursuant to section 274(b) (42 U.S.C. 2021(b)) of the Atomic Energy Act of 1954, as amended, and in accordance with the requirements of that State's laws and regulations shall be deemed to be in compliance with the radiation requirements of this section, insofar as his possession and use of such material is concerned, unless the Secretary of Labor, after conference with the Atomic Energy Commission, shall determine that the State's program for control of these radiation sources is incompatible with the requirements of this section. Such agreements currently are in effect only in the States of Alabama, Arkansas, California, Kansas, Kentucky, Florida, Mississippi, New Hampshire, New York, North Carolina, Texas, Tennessee, Oregon, Idaho, Arizona, Colorado, Louisiana, Nebraska, Washington, Maryland, North Dakota, South Carolina, and Georgia.

(ii) *Other sources.* Any employer who possesses or uses radiation sources other than source material, byproduct material, or special nuclear material, as defined in the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.), and has either registered such sources with, or is operating under a license issued by a State which has an agreement in effect with the Atomic Energy Commission pursuant to section 274(b) (42 U.S.C. 2021(b)) of the Atomic Energy Act of 1954, as amended, and in accordance with the requirements of that State's laws and regulations shall be deemed to be in compliance with the radiation requirements of this section, insofar as his possession and use of such material is concerned, provided the State's program for control of these radiation sources is the subject of a currently effective determination by the Assistant Secretary of Labor that such program is compatible with the requirements of this section. Such determinations currently are in effect only in the States of Alabama, Arkansas, California, Kansas, Kentucky, Florida, Mississippi, New Hampshire, New York, North Carolina, Texas, Tennessee, Oregon, Idaho, Arizona, Colorado, Louisiana, Nebraska, Washington, Maryland, North Dakota, South Carolina, and Georgia.

(Approved by the Office of Management and Budget under control number 1218-0103)

(Secs. 4(b)(2), 6(b) and 8(c), 84 Stat. 1592, 1593, 1596, 29 U.S.C. 653, 655, 657; Secretary of Labor's Order No. 8-76 (41 FR 25059); 29 CFR Part 1911)

[39 FR 23502, June 27, 1974, as amended at 43 FR 49746, Oct. 24, 1978; 43 FR 51759, Nov. 7, 1978; 49 FR 18296, Apr. 30, 1984]

§ 1910.97 Nonionizing radiation.

(a) *Electromagnetic radiation*—(1) *Definitions applicable to this paragraph.* (i) The term "electromagnetic radiation" is restricted to that portion of the spectrum commonly defined as the radio frequency region, which for the purpose of this specification shall include the microwave frequency region.

(ii) *Partial body irradiation.* Pertains to the case in which part of the body is exposed to the incident electromagnetic energy.

(iii) *Radiation protection guide.* Radiation level which should not be exceeded without careful consideration of the reasons for doing so.

(iv) The word "symbol" as used in this specification refers to the overall design, shape, and coloring of the rf radiation sign shown in figure G-11.

(v) *Whole body irradiation.* Pertains to the case in which the entire body is exposed to the incident electromagnetic energy or in which the cross section of the body is smaller than the cross section of the incident radiation beam.

(2) *Radiation protection guide.* (i) For normal environmental conditions and for incident electromagnetic energy of frequencies from 10 MHz to 100 GHz, the radiation protection guide is 10 mW/cm.^{2} (milliwatt per square centimeter) as averaged over any possible 0.1-hour period. This means the following:

Power density: 10 mW./cm.^{2} for periods of 0.1-hour or more.
Energy density: 1 mW.-hr./cm.^{2} (milliwatt hour per square centimeter) during any 0.1-hour period.

This guide applies whether the radiation is continuous or intermittent.

(ii) These formulated recommendations pertain to both whole body irradiation and partial body irradiation. Partial body irradiation must be in-

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
Atlanta GA 30333

STATEMENT OF EDWARD BAKER, M.D.

ACTING DEPUTY DIRECTOR

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

CENTERS FOR DISEASE CONTROL

PUBLIC HEALTH SERVICE

DEPARTMENT OF HEALTH AND HUMAN SERVICES

BEFORE THE

COMMITTEE ON GOVERNMENT AFFAIRS

UNITED STATES SENATE

June 17, 1987

Mr. Chairman and Members of the Comittee:

I am Edward Baker, Acting Deputy Director of the National Institute for Occupational Safety and Health. Thank you for inviting me to present the Institute's views on S.1085, the Nuclear Protection and Safety Act of 1987. With me today is Mr. Philip Bierbaum, Acting Director of the Institute's Division of Physical Sciences and Engineering. Per your invitation, I will confine my brief remarks to Title IV of S.1085 entitled, "Radiation Study Advisory Board of 1987."

Title IV would create a Radiation Study Advisory Board to advise and assist the Department of Energy (DOE) in conducting epidemiologic studies of the health effects of radiation. Also, the Board would perform an annual review of such epidemiologic studies carried out by the DOE and make recommendations to DOE concerning their future scope and direction.

We applaud the goal of Title IV in seeking a better understanding of the health effects of radiation through epidemiologic studies. We also applaud the provisions of Title IV which are designed to ensure that epidemiologic studies conducted by the DOE are subjected to peer review. The NIOSH experience indicates that the subjection of its study protocols and study results to peer review has been of great value and has enhanced both the quality and credibility of NIOSH research.

We appreciate the intent of Title IV to ensure that DOE epidemiologic study proposals are reviewed in an objective and competent manner prior to funding. However, we do not believe that the creation of yet another Federal advisory board is necessary to accomplish that singular purpose. Epidemiologic studies and investigations have been an integral part of the overall NIOSH program since the Institute's creation. Those studies and investigations have provided important inputs into NIOSH recommendations. However, we have rarely found instances where epidemiologic study or investigation results could be considered independent of other occupational safety and health issues. Therefore, we believe it would be more appropriate for any independent review of DOE epidemiologic study proposals be made part of a broader occupational safety and health oversight group to the DOE. The creation of a Federal advisory board merely to review epidemiologic study proposals would be neither efficient nor appropriate for the development and maintenance of an effective occupational safety and health program, nor would it be specialized enough to offer peer review for scientific or technical merit of specific projects. A more efficient and appropriate method for accomplishing the same objective would be to utilize consultants, ad hoc review panels or a Board of Scientific Advisors made up of competent experts to supplement the expertise of an independent safety and health oversight group. To the extent feasible, NIOSH would cooperate in this endeavor by providing experts from its own staff upon request to participate on ad hoc review panels or to serve as consultants to any oversight group which might be assigned this function.

NIOSH has conducted epidemiologic investigations at DOE facilities. We are convinced from that experience that the Department is making a serious attempt to utilize epidemiologic research as an important basis for improving its programs for protecting worker health and safety.

That concludes my testimony. I will be happy to answer any questions you might have.

JOHN GLENN, OHIO, CHAIRMAN

LAWTON CHILES, FLORIDA
SAM NUNN, GEORGIA
CARL LEVIN, MICHIGAN
JIM SASSER, TENNESSEE
DAVID PRYOR, ARKANSAS
GEORGE J. MITCHELL, MAINE
JEFF BINGAMAN, NEW MEXICO

WILLIAM V. ROTH, JR., DELAWARE
TED STEVENS, ALASKA
WILLIAM S. COHEN, MAINE
WARREN B. RUDMAN, NEW HAMPSHIRE
JOHN HEINZ, PENNSYLVANIA
PAUL S. TRIBLE, JR., VIRGINIA

LEONARD WEISS, STAFF DIRECTOR
JO ANNE BARNHART, MINORITY STAFF DIRECTOR

United States Senate
COMMITTEE ON
GOVERNMENTAL AFFAIRS
WASHINGTON, DC 20510-6250

June 18, 1987

Dr. Edward Baker, Acting Deputy Director
National Institute of Occupational Safety and Health
U. S. Department of Health and Human Services
200 Independence Avenue, S.W.
Washington, D.C. 20201

Dear Dr. Baker:

Thank you for your testimony before my Committee yesterday.

We request a response by June 24, 1987, to these questions. What is the National Institute of Occupational Safety and Health's estimate of the total cost to NIOSH of implementing S. 1085? Also, we would like a breakdown of that total into the cost of radiological and nonradiological compliance.

How many additional employees would NIOSH need to implement S. 1085? I would like the total figure as well as a breakdown into the number needed for radiological and nonradiological compliance.

How many employees do you currently have with radiological experience?

I would like a resource profile of NIOSH for the last seven years, broken down by personnel and resource funds.

I appreciate your prompt response to these questions.

Sincerely,

John Glenn

John Glenn
Chairman

JG/mc

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

National Institute for
Occupational Safety and Health
Centers for Disease Control
Atlanta GA 30333

JUL 1 3 1987

The Honorable John Glenn
Chairman, Committee on
Governmental Affairs
United States Senate
Washington, D.C. 20510-6250

Dear Mr. Chairman:

This is in response to your letter of June 18. We appreciated the opportunity to testify before your committee.

It is difficult to arrive at a cost to NIOSH for implementing S. 1083. The reason for that difficulty, of course, is our lack of knowledge of the magnitude of the demand for NIOSH services which might be forthcoming if the proposed legislation is finally passed into law. We would expect to be called upon to undertake primarily two types of activities: health hazard evaluations (HHEs) and health and mortality studies. HHEs are generally short term and relatively inexpensive. The health and mortality studies are usually long term and significantly more resource intensive. The NIOSH experience has been that routine HHEs average approximately $10,000 each. However, that figure can vary substantially depending on the complexity of the evaluations. In some circumstances, the cost can be as high as $200,000.

Regarding the expected cost of health and mortality studies at DOE nuclear facilities, NIOSH has had some experience that may be indicative of expected costs per study. NIOSH has conducted three such studies at DOE nuclear facilities in the recent past, and those studies cost approximately $230,000 per study and required 3 person years each. We do not know how typical those three studies might be, but it would not be unreasonable to assume that other studies at DOE nuclear facilities would be in that cost range. We also do not know how many such studies would be required.

With regard to personnel, the number of current NIOSH employees with radiological experience is quite limited. The Division of Surveillance, Hazard Evaluations and Field Studies has three industrial hygiene/health physicists and five epidemiologists/physicians with some experience in radiological health studies. The Division of Biomedical and Behavioral Sciences has four staff members specializing in radiological research; however, their emphasis has been in non-ionizing radiation.

Page 2 - The Honorable John Glenn

Per your request, we have enclosed a summary resource profile of NIOSH for the current year as well as the last 7 years, broken down by personnel and research funds.

We hope this information will be helpful to you. If we can be of further assistance, please let us know.

Sincerely yours,

J. Donald Millar, M.D.
Assistant Surgeon General
Director

Enclosure

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
Budget History
($000)

		RESEARCH					TRAINING		TOTAL
		FIXED COSTS				OTHER RESEARCH COSTS			
BUDGET	Positions	Personnel Salaries & Benefits	Facilities Operation & Support Svcs	Grants	Subtotal		Grants	Other	
FY 1980	923	21,793	5,445	7,040	34,278	32,222	12,900	982	80,382
FY 1981	835	24,626	5,643	4,740	35,009	24,077	7,602	1,160	67,848
FY 1982	773	26,304	5,796	4,740	36,840	19,462	5,760	—	62,062
FY 1983	773	26,932	6,070	4,740	37,742	13,982	5,760	—	57,484
FY 1984	773	27,950	5,037	6,501	39,488	17,654	8,760	—	65,902
	FTEs								
FY 1985	851	28,754	4,547	6,501	39,802	16,775	8,760	—	65,337
FY 1986	806	29,396	5,124	6,221	40,741	15,427	8,383	—	64,551
FY 1987	806	29,689*	5,523*	6,501	41,713	18,323*	9,900	—	69,936

*Estimate

EH

United States Government — Department of Energy

memorandum

DATE: JUN 2 4 1987

REPLY TO ATTN OF: DP-20

SUBJECT: ACTION: Response to Mound Environmental Preliminary Survey Report

TO: The Under Secretary

PURPOSE:

To sign a letter to Senator Glenn which provides information concerning the status of major findings resulting from an Environmental Survey of the Mound Plant by staff of the Assistant Secretary for Environmental Safety and Health.

BACKGROUND:

During a June 17, 1987, hearing on the Nuclear Protection and Safety Act of 1987, Senator Glenn requested a status of corrective actions undertaken subsequent to the Mound survey.

DISCUSSION:

The letter responds to the major environmental findings noted during the Survey of Mound and provides an action or plan which describes the status and, where available, the cost estimates for each finding contained in the Environmental Survey Report.

RECOMMENDATION:

That the Under Secretary sign the letter to Senator Glenn at Tab A.

S. R. Foley, Jr.
Assistant Secretary
for Defense Programs

Attachment

Department of Energy
Washington, DC 20585

June 24, 1987

Honorable John H. Glenn
Chairman
Committee on Governmental Affairs
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

I want to thank you for the opportunity to testify before the Senate Committee on Governmental Affairs on June 17, 1987, to present the Department of Energy's (DOE's) views on Bill S. 1085, the "Nuclear Protections and Safety Act of 1987." Both Secretary Herrington and I share your view that DOE has a responsibility to assure that its nuclear facilities are operated in a manner which protects the safety and health of its employees and assures protection of public health and the environment.

During the hearing last week, you raised a number of concerns relating to the DOE Environmental Survey Preliminary Report of the Mound Plant. I am pleased to provide information which describes the actions taken to address the preliminary findings identified in the Mound Plant Survey as well as our plans for further corrective actions which require additional resources and a longer time to complete.

DOE and the Mound Plant operating contractor are dedicated to resolving the environmental problems at the Mound Plant. The Environmental Survey preliminary findings have assisted in the identification and categorization of the problems. In response to the Survey, the Mound Plant established an action plan to assure timely and effective implementation of each of the findings. We have already taken actions to correct procedural and operational concerns that do not require further studies. For those Environmental Survey preliminary findings which will require further and possibly significant funding commitments, we are proceeding to conduct necessary studies and cost data.

I have enclosed information regarding the Survey preliminary findings and our ongoing and planned response actions. The total cost of necessary corrective actions cannot be precisely defined at this time. However, some specific costs have been defined and are provided in the enclosure while further evaluations are required in order to develop costs for the remaining items. These cost figures will be developed and provided to you as soon as the necessary data becomes available.

Mr. Chairman, the Department has established the environmental protection of its facilities as a high priority. Also, I want to assure you that the Department has addressed, and will continue to address, environmental problems at the Mound Plant and other DOE facilities. I would be pleased to arrange a briefing for you and your staff on the detailed findings of the Mound Plant Survey as well as our plan for corrective actions.

I trust this information is responsive to your request for information on the Department's actions in response to the Environmental Survey preliminary findings at the Mound Plant.

Yours truly,

Joseph F. Salgado
Under Secretary

Enclosures:
(1) DOE Mound Plant Environmental Survey Findings Response Plan
(2) Status Report on Environmental Findings

cc w/encl:
Honorable William V. Roth, Jr.
Ranking Minority Member

DEPARTMENT OF ENERGY (DOE) MOUND PLANT
ENVIRONMENTAL SURVEY FINDINGS RESPONSE PLAN

The Assistant Secretary for Defense Programs is implementing a program to address the preliminary findings of the Environmental Survey conducted by the Office of the Assistant Secretary for Environment, Safety, and Health at the Mound Plant, Miamisburg, Ohio. Discussion of major findings is presented below followed by a status report of each specific Survey finding.

Finding

Levels of tritium in onsite and offsite ground water exceed limits set for the Safe Drinking Water Act; the aquifer serves as a public drinking water supply; activities are being conducted to reduce the levels of the wells to within regulatory limits.

Corrective Action

All private and public water supplies are within regulatory limits and will continue to be maintained in compliance with the Safe Drinking Water Act. A maintenance program which consists of pumping water from the affected part of the aquifer in order to reduce the tritium concentration has been in place since 1976. This program is effective at maintaining compliance. However, an extensive geohydrologic program is currently under way to identify the sources of the tritium. The program is expected to be completed by September 1988 and the associated results will enable the Department to determine needed remedial actions.

Finding

Over 200 drums of hazardous waste and chemical products are stored in an exposed manner that could result in leaks; these practices include waste drums stored in an open field and product storage drums with no diking or curbs stored near storm water drains.

Corrective Action

All hazardous waste drums have been shipped to an EPA-approved disposal facility. Only nonregulated waste oil drums remain in the field, and these will be relocated to a new staging area prior to July 1, 1987. The hazardous waste drums were temporarily stored in the field under conditions approved by the Ohio Environmental Protection Agency while Mound's hazardous waste storage facility was being relocated. A program is in place to assure proper storage of product drums.

Finding

Various problems, including siting, lack of calibration, unmonitored sources, and deficiencies in stack sampling, were uncovered in the air monitoring program potentially affecting the accuracy of the reported dose estimates for the facility.

Corrective Action

Calibrations have been performed since the Survey and all units were found to be operating within acceptable limits. Operational deficiencies in stack monitoring have been corrected, and sampler locations are being evaluated and necessary corrective actions will be completed by July 1988. A regular calibration program has been implemented. Although measurements will be completed by January 1988, estimates of the emissions from unmonitored sources at Mound indicate their contribution to the overall site emissions is negligible. The current reported offsite dose estimate for the facility is less than 1.0 millirem/year. We believe that the cumulative effect of the monitoring inadequacies will be minimal, and doses will still be significantly below the U.S. EPA standard of 25 millirem/year.

Finding

Seventeen areas onsite and one offsite have varying levels of radioactive surface contamination; additional areas represent the potential for contamination with hazardous substances.

Corrective Action

The areas of radioactive contamination have been monitored by Mound since 1976 to assure contamination does not pose undue risk to the general populace. As part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) compliance program, DOE is conducting preliminary assessments of all potentially contaminated areas, both radioactive and hazardous contamination, at Mound. Subsequent site characterization will be completed by September 1989. Any remedial actions identified by these CERCLA studies will be conducted consistent with the requirements for Federal facilities given in the Superfund Amendments and Reauthorization Act. Any remedial actions are to be incorporated into an ongoing decontamination and decommissioning program. To date, three of the areas have already been scheduled for cleanup under this program.

STATUS REPORT ON ENVIRONMENTAL FINDINGS
MOUND PLANT
JUNE 24, 1987

MEDIA	FINDINGS	ACTION	COST ESTIMATES
Air	1. Accuracy of dose estimates (P. 3-34 of Preliminary Survey Report)	1. Action underway. Sampler calibrations completed and regular program in effect; stack monitoring deficiencies corrected. Sampler siting problems will be corrected by July 1988.	$10K (Preliminary Estimate)
	2. Accuracy of radionuclide emission (P. 3-35)	2. Action underway. Upgrades to emission sampling begun in FY 1986. Additional work dependent on data results from sampling and analysis portion of the survey which are expected by January 1988.	$100K for first phase
	3. Unapproved method to calculate offsite dose impacts (P. 3-37)	3. Action underway. Request for EPA approval of alternative method to be submitted by July 1987.	Not Applicable (NA)
	4. No organic or toxic emissions inventory (P. 3-37)	4. Action planned. As the report states, this is probably not a problem but will be checked by sampling which is expected to be completed by January 1988.	[1/] To Be Determined (TBD)
	5. Tritium emissions from WD Building (P. 3-38)	5. Action planned. As the report states, tritium air emissions from WD Building are small. Nevertheless, sampling and analysis will be conducted to assess the potential for tritium releases. The sampling and analysis is expected to be completed by January 1988.	NA

[1/] Included in the environmental survey sampling program which is estimated to cost $1.5M. This is supplemented by Albuquerque Operations Office's sampling program estimated to cost $1.8M (and to be completed by October 1988).

MEDIA	FINDINGS	ACTION	COST ESTIMATES
Soil	1. Potential Pu & Thorium movement on new property (P. 3-57 Preliminary Survey Report)	1. Action planned. Current data does not indicate movement of plutonium and thorium on the new property. Nevertheless, sampling and analysis will be conducted to determine whether movement of contamination is necessary. The sampling and analysis is expected to be completed by January 1988. The need for remedial action is dependent on results of these sampling and analysis efforts.	[1/] TBD
	2. Potential surface water radionuclide contamination from runoff (P. 3-58)	2. Action planned. Extremely low levels of contaminants are routinely detected in the storm water discharge from onsite contaminated areas. Additional sampling and analysis will be conducted to assess the potential for surface water contamination. The sampling and analysis work is expected to be completed by January 1988. Associated results will be used to determine the schedule for an ongoing long-range plan to clean up contaminated areas.	[2/] TBD
	3. Potential radiation contamination of ground water (P. 3-59)	3. Action planned. As the report states, the contamination potential is low due to the low mobility characteristics of the radionuclide. Ground water monitoring for the past ten years has not detected any of these radionuclides.	[2/] TBD
	4. Soil radionuclide studies (P. 3-61)	4. Action planned. An evaluation of this recommendation will be completed by June 1988.	NA

[1/] Included in the environmental survey sampling program which is estimated to cost $1.5M. This is supplemented by Albuquerque Operations Office's sampling program estimated to cost $1.8M (and to be completed by October 1988).

[2/] Soil portion of cleanup to be $30K

MEDIA	FINDINGS	ACTION	COST ESTIMATES
Toxic Materials	1. Potential for release of hazardous substances to soil and surface water (P. 4-19 of Preliminary Survey Report)	1. Action underway. The existing surveillance program is being improved to ensure that action is taken when appropriate.	$100K (preliminary estimate)
	2. Potential for release from underground storage tank (P. 4-20)	2. Action planned. The aviation fuel will be disposed of by 1988.	$20K
	3. Potential for release of waste solvents from underground storage tank (P. 4-20)	3. Action planned. Sampling and analysis is required to determine the contents of the task and the need for corrective action. The sampling and analysis work is expected to be completed by January 1988.	[1/] TBD
	4. Minor PCB leaks (P. 4-21) Radioactively Contaminated PCB	4. Action underway. Survey recommendations being reviewed for appropriate implementation.	TBD
	5. Fluid Storage	5. Action underway. DOE reviewing options for mixed waste disposal.	TBD
Direct Radiation	No findings.		
QA/QC	1. Insufficient laboratory QA protocols (P. 4-25)	1. Action underway. As the report states, "No indication of invalid data." Most of the findings relate to documentation and they are being evaluated for implementation. Evaluation to be completed by September 30, 1987. Actions, where appropriate, will be implemented.	$50K (preliminary estimate)

[1/] Included in the environmental survey sampling program which is estimated to cost $1.5M. This is supplemented by Albuquerque Operations Office's sampling program estimated to cost $1.8M (and to be completed by October 1988).

MEDIA	FINDINGS	ACTION	COST ESTIMATES
Surface Water	1. Potential contamination of sediment (P. 3-78 of Preliminary Survey Report)	1. Action complete. Subsequent to the survey, Mound analyzed retention pond silts for the presence of hazardous materials and none were detected. Radioactive contamination of the sediment is being assessed as part of the CERCLA compliance program.	$30K
	2. Potential radioactive wastewater release if pipeline breached (P. 3-80)	2. Action planned. Engineering study is completed. Corrective action will be initiated in FY 1988.	TBD
	3. Unrepresentative river sediment sampling (P. 3-80)	3. Action planned. Sampling program is being modified to obtain representative samples. Routine sampling where the contaminated sediment is most likely to exist.	NA
	4. Unrepresentative effluent flow monitoring (P. 3-80)	4. Action planned. Evaluation to be complete by December 1987. Appropriate upgrading will follow.	TBD
	5. Inoperative sampling devices (P. 3-80)	5. Action Planned. These samplers will be upgraded by January 1988.	NA
	6. Insufficient dike capacity (P. 3-81)	6. Action underway. Fuel volume will be maintained so as not to exceed adequate dike capacity. A budget request for a new storage tank is currently being developed.	TBD

MEDIA	FINDINGS	ACTION/COMMENTS	COST ESTIMATES
Ground Water	1. Tritium contamination (P. 3-93 of Preliminary Survey Report)	1. Action underway. All drinking water supplies are maintained in compliance with EPA standards. Investigations are being conducted as part of the CERCLA compliance program initiated in 1984. Remedial action will be taken, as appropriate, based on the results of this study.	$850K studies; remedial action TBD.
	2. Areas with potential to adversely affect ground water (P. 3-94)	2. Same as Item 1.	Included in item 1
	3. Broken pipes and wastewater treatment system (P. 3-95)	3. Same as Item 1.	Included in item 1
	4. Poor characterization of perched aquifer system (P. 3-96)	4. Same as Item 1.	Included in item 1
	5. Ground water monitoring program (P. 3-96)	5. Action underway. Mound agrees with the survey finding that the current monitoring program produces reliable and credible data. Survey team suggestions will be evaluated for possible implementation.	Included in item 1

MEDIA	FINDINGS	ACTION	COST ESTIMATES
Waste Management	1. Potential release of hazardous waste to soil (P. 4-10 of Preliminary Survey Report)	1. Action underway. All drums containing hazardous waste have been shipped offsite for disposal at EPA-approved vendors. The nonregulated oil drums are being sampled to verify that there are no PCB and other hazardous material. These nonregulated oil drums are currently being moved to a new staging area at Mound. Sample analysis to be complete by October 1987.	$400K
	2. Unpermitted hazardous waste storage unit (P. 4-11)	2. Action underway. Only nonregulated waste oil drums remain, and those will be relocated prior to July 1, 1987. Mound did notify and received approval from the State for temporary storage in an open field.	Included in item 1.
	3. Potential Plutonium waste water release (P. 4-11)	3. Action underway. The procedures for unloading the tank truck at WD Building will be modified to assure the proper positioning of the drain valve prior to initiation of the unloading operation. This will be completed by September 30, 1987.	NA
	4. Leak detection system operation (P. 4-11)	4. Action planned. The leak detection system for waste tanks C and D will be replaced by the end of FY 1987.	NA

MEDIA	FINDINGS	ACTION	COST ESTIMATES
	5. Leakage within Building 23 (P. 4-12)	5. Action planned. Sampling of drum contents and inspection of drums for leakage is expected to be completed by January 1988. Results will determine whether corrective actions are required.	[1/] TBD
	6. Temporary waste solvent staging areas (P. 4-12)	6. Action underway. All waste solvent staging areas will be reviewed by December 1988 to develop cost effective engineered retention barriers.	TBD
	7. Wastewater treatment plant sludge sent to NTS may be a hazardous waste (P. 4-13)	7. Action underway. Each batch of sludge will be analyzed for to verify that there are no hazardous waste constituents.	$20K per year
	8. Potential for hazardous materials to contaminate burn cubicle ash (P. 4-13)	8. Action planned. Sampling being done to determine if corrective action is necessary. Sampling analysis work is expected to be completed by January 1988.	[1/] TBD
	9. Hazardous waste contamination of the general trash (P. 4-14)	9. Action underway. Worker education and information campaigns covering the appropriate disposal of hazardous waste will be continued.	NA
	10. Silver recovery unit not yet in operation (P. 4-15)	10. Action planned. The silver recovery unit will be placed in operation by December 1989.	NA
	11. Increased disposal cost due to mixing of waste solvents (P. 4-15)	11. Action underway. Evaluation of cost effective alternatives will be completed in FY 1988.	TBD

[1/] Included in the environmental survey sampling program which is estimated to cost $1.5M. This is supplemented by Albuquerque Operations Office's sampling program estimated to cost $1.8M (and to be completed by October 1988).

MEDIA	FINDINGS	ACTION	COST ESTIMATES
CERCLA	1. Potential for undetected Pu movement in canal (P. 4-40 of Preliminary Survey Report)	1. Action planned. Engineering studies will be performed to evaluate remedial action options.	NA
	2. Leachate discharge from new landfill (P. 4-41)	2. Action planned. Review of engineering drawings indicate that this discharge is not possible. However, sampling will be conducted as part of the survey sampling program.	NA
	3. Potential contamination from solvent leach pit (P. 4-42)	3. Action planned. Sampling being done to ascertain if corrective action is necessary. Sampling and analysis work is expected to be completed by January 1988.	1/TBD
	4. Potential contamination from construction spoil site. (P. 4-42)	4. Same as item 3.	1/TBD
	5. Potential surface contamination at old solvent storage area (P. 4-43)	5. Same as item 3.	1/TBD
	6. Disposal of organic solvents to soil (P. 4-43)	6. Same as item 3.	1/TBD
	7. Elevated radiation readings on offsite dirt road (P. 4-44)	7. Action planned. Sampling being done to ascertain if corrective action is necessary. Suspected cause is natural radioactivity in the power plant fly ash used as road fill. Sampling and analysis work expected to be completed by January 1988.	1/TBD
	8. Potential for breach in landfill cover (P. 4-44)	8. Action complete. As stated in the report, the trees growing on top of the landfill were cut down.	NA

1/ Included in the environmental survey sampling program which is estimated to cost $1.5M. This is supplemented by Albuquerque Operations Office's sampling program estimated to cost $1.0M

YELLOW

Mr. Chairman, the Department has established the environmental protection of its facilities as a high priority. Also, I want to assure you that the Department has addressed, and will continue to address, environmental problems at the Mound Plant and other DOE facilities. I would be pleased to arrange a briefing for you and your staff on the detailed findings of the Mound Plant Survey as well as our plan for corrective actions.

I trust this information is responsive to your request for information on the Department's actions in response to the Environmental Survey preliminary findings at the Mound Plant.

Yours truly,

Joseph F. Salgado
Under Secretary

Enclosures:
(1) DOE Mound Plant Environmental Survey Findings Response Plan
(2) Status Report on Environmental Findings

cc w/encl:
Honorable William V. Roth, Jr.
Ranking Minority Member

DP-226/RInlow/lt24June87

Distribution
DP-226 (Inlow)
DP-20
DP/MR (2)
EH-23
EH-1
GC-11
CP-30
ES (4)
DPMF (GTN)(2)
Std OMA (6)

DP-2
DP-22 Cullen
DP-3 Nicks
DP-22 Wade
DP-1 Foley
EH-23
EH-1
G-11
CP-30
ES
GC-2
GC-1

University of Cincinnati

Office of Vice President
and University Dean
for Graduate Studies and Research

Mail Location 627
Cincinnati, Ohio 45221-0627

July 20, 1987

Senator John Glenn
Chairman
Committee on Governmental Affairs
340 Dirksen Senate Office Building
Washington, DC 20510

Dear Senator Glenn:

Enclosed is a statement regarding Senate Bill 1085. I heartily endorse passage of this piece of legislation. It is my conviction that with its passage events will be set in motion to promote better health and safety for workers in DOE facilities.

Sincerely,

Eula Bingham

Eula Bingham
Vice President and
University Dean for
Graduate Studies and
Research
Professor of
Environmental Health

Eula Bingham, Ph.D.

My name is Eula Bingham. I am Professor of Environmental Health at the University of Cincinnati College of Medicine and Vice President for Research and Graduate Studies for the University of Cincinnati. I have been involved in teaching and research in environmental/occupational toxicology for over 25 years. From 1977-81 I was Assistant Secretary of Labor for Occupational Safety and Health in the U.S. Department of Labor.

This testimony is in support of S.1085. I would like to initiate my testimony by expressing my strong support for S.1085, a bill to create an independent Nuclear Safety Board to ensure the safety of workers at United States Government nuclear facilities, to apply the provisions of OSHA and NIOSH to DOE facilities, to clarify the jurisdiction and powers of various agencies regarding hazardous wastes from nuclear facilities, and to ensure independent research on the health effects of radiation.

Legitimate and unresolved questions regarding the safety of nuclear facilities and the health of workers employed at such facilities are continually being raised by scientists, workers, and the media. This bill will provide for creation of <u>independent</u> mechanisms for assessing and correcting health or safety problems at DOE facilities.

Title II of the bill extends the provisions of the Occupational Safety and Health Act of 1970 to cover facilities of DOE. The bill provides that OSHA standards shall apply in DOE

facilities and would serve as a basis for determining whether contaminant levels are within acceptable limits. Title II provides that NIOSH investigators and OSHA inspectors shall have unrestricted access to DOE-operated facilities and to health and safety records in those facilities.

Presently the exemption of DOE facilities from the provisions of the OSHA Act are illustrated by problems that Dr. Landrigan formerly of NIOSH, encountered in efforts to perform health hazard evaluations at the Piketon Nuclear plant, Piketon, Ohio and at the Fernald Plant near Cincinnati, Ohio. (See Landrigan's Testimony)

In addition, I can recall numerous experiences when workers at DOE facilities operated by private contractors would file complaints regarding health and safety problems and the bureaucratic hassles to deal with these problems were very complicated and resulted in long delays.

During the fall of 1986, a coalition of the labor (unions) organizations met in Cincinnati to discuss health and safety problems at their respective DOE facilities. Over and over the representatives from the various local unions from across the U.S. told of being second-class citizens, i.e., their questions and complaints were ignored and they were kept in the dark regarding hazards. When workers are told "there are no problems" it is important to provide credible information to back up such statements. It is little wonder that workers become cynical and suspicious about being told the truth regarding workplace hazards

in DOE facilities.

Title IV of S.1085 provides for an Advisory Board to advise the Secretary of Energy regarding epidemiologic studies on the effects of radiation. The DOE and its predecessor agencies have conducted epidemiologic studies of the human health effects of reported ation. Many of these studies have been technically excellent, and have been conducted by competent investigators; however, interpretations of the data have been challenged by scientists and workers.

Suspicion arises from the fact that DOE both promotes nuclear power and nuclear-related activities and yet indicates levels of protection for the health of workers engaged in nuclear activities. An inherent conflict of interest is viewed in this dual role.

I support the passage of this important legislation.